

**A STUDY ON DIAGNOSTIC METHODOLOGY IN  
SIDDHA SYSTEM FOR  
AN MALADU / MALE INFERTILITY  
(DISSERTATION SUBJECT)**



*For the partial fulfilment of the requirements to the Degree of*

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## INTRODUCTION

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Siddha is a reputed system of medicine well known for its holistic scientific approach in diagnosis and management of diseases ailing humans. Siddha system is the treasure dedicated to world by Siddhars for keeping the people at the state of physical, mental and social well being. Siddhars realized that a good physical body free from disease is a great tool to attain the 'eternal bliss'. In the process, they evolved this system of medicine primarily for healthy and promotive living and also for elimination of diseases.

An accurate diagnosis, in the sense of diagnostic procedure, can be regarded as an attempt at classification of an individual's condition into separate and distinct categories that allow medical decisions about treatment and prognosis to be made. A system of medicine should have strengthened basics explaining medical diagnosis, to stay in practice among people for long period. Siddha has got the merit of well explained fundamental theories like five element theory, three biological humours, seven body constituents, eight fold examinations etc which are essential for determining etiology, classification, pathology and treatment of diseases.

Noi Naadal is a wing of Siddha that deals with different diagnostic procedures to determine the underlying root cause of diseases i.e the disharmony of Uyir thathus (Three biological humours) and the effect of this disharmony on body constituents. The proper combination and harmony of the three humours- *Vali*, *Azhal*, *Iyam* in their qualities and right proportion are responsible for maintaining good health. When these three humours are disturbed by food, life style modification or any other disorders, they are provoked and disease manifest. Selection of medicine is based on root cause and altered humoural equilibrium. Siddha doctors are expected to do miracles in the present world challenging illnesses. Male infertility is one among them which is at need of perfect diagnosis and management in Siddha system of medicine.

Infertility is defined as failure to conceive after 12 or more months of regular unprotected intercourse. The World Health Organization defines the term primary infertility as the inability to bear any children, whether this is the result of the inability to conceive a child, or the inability to carry a child to full term after 12

months of unprotected sexual intercourse. Conception normally is achieved within 12 months in 80-85% of couples who use no contraceptive measures and persons presenting after this time should therefore be regarded as possibly infertile and should be evaluated. In India which ranks top in population, quite unrelated to national population figure, is the prevalence of infertility. Primary infertility is a common and distressing problem in India as in other parts of the world. *Semen abnormalities* (22.4%), Anovulation (17.2%), Ovarian failure (8.8%), Hyperprolactinemia (8.4%), and tubal disease (7.2%) are common causes of infertility. The pattern of infertility in India is the same as in other parts of the world, except that infertile couples report late for evaluation.

A contributory male infertility factor is identified in almost 50% of infertile couples. The distribution of diagnoses seen in a male infertility clinic reveals that 75% of men will have idiopathic infertility with or without an abnormal semen analysis. The term male infertility does not constitute a defined clinical syndrome, but rather a collection of different conditions exhibiting a variety of aetiology and a varying diagnosis. A comprehensive male infertility evaluation is a critical part of optimizing a couple's reproductive potential. Basic semen analysis has remained an essential screening test in the assessment of human male fertility.

Even after the development of well advanced diagnostic techniques like Semen analysis, USG scrotum, hormonal studies, testicular biopsy, still causes of male infertility remain idiopathic in many cases. The introduction of molecular techniques has provided great insight into the genetics of infertility. The causes are known in less than half of these cases, out of which genetic or inherited disease and specific abnormalities in the Y chromosome are major factors. Yet, the understanding of the genetic causes of male infertility remains limited. Hence it is the need of hour to develop sensitive and reliable diagnostic techniques for male infertility to reveal the underlying cause and pave the way for choosing treatment protocol. Siddhar Thiruvalluvar insists, for cure of diseases, concentrate on proper understanding about the causative factor of a disease, as explained in the verses:

*“Noi naadi noi mudhal naadi athu thanikum*

*vaai naadi vaippa cheyal”*

Siddha approach to Male infertile (Aanmaladu) patients include *Envagai thervu* (Eight fold examination), *Manikkadai nool*(Wrist circumbreadth sign), *Jothidam* (Astrology), *Udalkattugal*, *Yakkai*(Body type determination),and *Sukkila parisothanai* (Siddha way of semen analysis involving the qualities expounded by Sage Yugimuni). These parameters in a infertile patient can disclose underlying cause, based on which a perfect management of infertility can be done.

The author hopes that examining male infertile patients with siddha diagnostic procedures can reinforce and augment the understanding of pathophysiology and diagnosis of the disease ‘*Aanmaladu*’(Male infertility) and lead the way for its management which can bear fruit benefiting every infertile patient.

## **2. AIM AND OBJECTIVES**

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### **2.1. AIM**

To conduct a study on Diagnostic methodology in Siddha system for  
Aan maladu/ Male infertility.

### **2.2. OBJECTIVES**

- To elucidate a Diagnostic methodology for Aan maladu.
- To determine the Humoral Pathology behind Aan maladu using Siddha diagnostic procedures.
- To correlate Sage Yugimuni's insight about Diagnostic characteristics of Aan maladu with the scientific concepts about Male infertility mentioned in the Reproductive medicine.
- To validate the Yugimuni's semen analysis technique in diagnosing Aan maladu.
- To review the literatures regarding Diagnostic procedures and Pathophysiological concepts of Aan maladu.



### 3. REVIEW OF LITERATURE

#### A.SIDDHA PHYSIOLOGY

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##### 3. A.1. SUGARANA NILAI (PHYSIOLOGICAL STATE) IN SIDDHA MEDICINE

The five basic elements, namely Aagayam (Space), Kaal (Air), Thee (Fire), Neer (Water), and Mann (Earth) are the building blocks of all the physical and subtle bodies existing in this whole universe. These are called as the ‘Adippadai Boothams’ (Basic Elements) (or) ‘Panchaboothams’.

These five elements together constitute the human body and origin of other material objects are explained as Pancheekaranam (Mutual Intra Inclusion). None of these elements could act independently by themselves. They could act only in co-ordination with other four elements. All the living creatures and the non-living things are made up of these five basic elements. The five basic elements form the connecting link between the Microcosm (Man) and Macrocosm (World). This concept is evident from Siddhar’s lines,

“அண்டத்தில் உள்ளதே பிண்டம்;

பிண்டத்தில் உள்ளதே அண்டம்”

Any change in the universe due to natural or unnatural causes will create changes in human systems. For example the natural disorders like cyclone, heavy rain, mist and scorching sun or man created impurities of air and water will create changes both in the atmosphere and in the human body. Hence the change in the elementary conditions of external world has its corresponding change in the human organs.

உலகம் பஞ்ச பூதம்

"நிலம் நீர்தீவளி விசம்போடைந்தும்

கலந்தமயக் கமுலகம் மாதலின்"

-தொல்காப்பியம்

## தேகம் பஞ்ச பூதம்

"தலங்காட்டி இந்தச் சடமான ஐம்பூதம்  
நிலங்காட்டி நீர் காட்டி நின்றிடுந் தீ காட்டி  
வலங்காட்டி வாயுவால் வளர்ந்தே இருந்தது  
குலங்காட்டி வானில் குடியாய் இருந்ததே".

-பதினென் சித்தர் நாடி சாஸ்திரம்

As per the above lines, the universe and the human body are made of five basic elements.

### 3. A.2. THE 96 BASIC PRINCIPLES (96 THATHUVAM)

According to Siddha system of medicine, 'Thathuvam' is considered as a science that deals with basic functions of the human body. Siddhars described 96 principles as the basic constituents of human body that include physical, physiological, psychological and intellectual components of an individual. These 96 Thathuvams are considered to be the cause and effect of our physical and mental well-being. The Thathuvam is the author of the conception of human embryo on which the theory of medicine is based.

#### 1. BOOTHAM – 5 (*ELEMENTS*)

- |            |                       |
|------------|-----------------------|
| 1. Aagayam | - Firmament           |
| 2. Vaayu   | - Flatus(Air)         |
| 3. Thee    | - Fire                |
| 4. Neer    | - Fluid(Water)        |
| 5. Mann    | - Firm Ground( Earth) |

#### 2. PORI – 5 (*SENSE ORGANS*)

- |                    |  |
|--------------------|--|
| 1. Sevi (Ear)      | -a structural component of 'Aagayam' bootham |
| 2. Thol (Skin)     | -a structural component of 'Vaayu' bootham   |
| 3. Kann (Eye)      | -a structural component of 'Thee' bootham    |
| 4. Naakku (Tongue) | -a structural component of 'Neer' bootham    |
| 5. Mookku (Nose)   | -a structural component of 'Mann' bootham    |

### **3. PULAN – 5 (*FUNCTIONS OF SENSE ORGANS*)**

- |              |   |
|--------------|---|
| 1. Kaetal    | -Hearing, a functional component of Aagayam bootham |
| 2. Thoduthal | -Touch, a functional component of Vaayu bootham     |
| 3. Paarthal  | -Vision, a functional component of Thee bootham     |
| 4. Suvaithal | -Taste, a functional component of Neer bootham      |
| 5. Nugarthal | -Smell, a functional component of Mann bootham      |

### **4. KANMENTHIRIYAM – 5 (*MOTOR ORGANS*)**

1. Vaai (Mouth) - Speech is delivered in relation with Space element.
2. Kaal (Leg) -Walking takes place in concordance with Air element.
3. Kai (Hands) -Giving/Taking are carried out with the influence of Fire element.
4. Eruvaai (Rectum) -The excreta is eliminated in association with Water element.
5. Karuvaai (Sex Organs) -The Sexual acts are carried out in association with the earth element.

### **5. KARANAM – 4 (*INTELLECTUAL FACULTIES*)**

- |               |   |  |
|---------------|---|--|
| 1. Manam      | - | Thinking about something               |
| 2. Bhuddhi    | - | Deeply analyzes the same               |
| 3. Agankaaram | - | Determination to do the same           |
| 4. Siddham    | - | Accomplishment of the determined Thing |

### **6. ARIVU – 1 (*WISDOM OF SELF REALIZATION*)**

To analyze good and bad

### **7. NAADI – 10 (*CHANNELS OF LIFE FORCE RESPONSIBLE FOR THE DYNAMICS OF PRANAN*)**

1. Idakalai - Starts from the right big toe, runs criss-cross to end in the left nostril
2. Pinkalai - Starts from the left big toe, runs criss-cross to end at the right nostril.
3. Suzhumunai -Starts from Moolaathaaram and extends upto centre of head
4. Siguvai - Located at the root of tongue; it helps in the swallowing of food and water
5. Purudan -Located in right eye.

- 6. Kanthari -Located in left eye.
- 7. Atthi -Located in right ear.
- 8. Allampudai -Located in left ear.
- 9. Sangini -Located in genital organ
- 10. Gugu -Located in ano-rectal region

## **8. VAAYU – 10 (VITAL NERVE FORCE WHICH IS RESPONSIBLE FOR ALL KINDS OF MOVEMENTS)**

### **1. Uyir kaal (Piraanan)**

This is responsible for the respiration of the tissues, controlling knowledge, mind and five sense organs and digestion of the food taken in.

### **2. Keel nokku kaal (Abanan)**

It lies below the umbilicus. It is responsible for the downward expulsion of stools and urine, ejaculation of semen and menstruation.

### **3. Paravu kaal (Viyanan)**

This is responsible for the motor and sensory function of the entire body and the distribution of nutrients to various tissues.

### **4. Mael nokku kaal (Uthanan)**

It originates at Utharakini. It is responsible for digestion, absorption and distribution of food. It is responsible for all the upward movements.

### **5. Samaanan (Nadu kaal)**

This is responsible for the neutralization of the other 4 Valis i.e. Piranan, Abanan, Viyanan and Uthanan. Moreover it is responsible for the nutrients and water balance of the body.

### **6. Naagan**

It is a driving force of eye balls responsible for movements.

### **7. Koorman**

It is responsible for the opening and closing of the eyelids and also vision. It is responsible for yawning.

### **8. Kirukaran**

It is responsible for the salivation of the tongue and also nasal secretion.  
Responsible for cough and sneezing and induces hunger.

### **9. Devathathan**

This aggravates the emotional disturbances like anger, lust, frustration etc. As emotional disturbances influence to a great extent the physiological activities, it is responsible for the emotional upsets.

### **10. Dhanancheyan**

Expelled three days after the death by bursting out of the cranium. It is responsible for edema, plethora and abnormal swelling in the body in the pathological state.

## **9. AASAYAM – 5 (VISCERAL CAVITIES)**

1. **Amarvasayam** (Reservoir Organ) - Stomach. It lodges the ingested food.
2. **Pakirvasayam** (Absorption Site)-Small intestine. The digestion and assimilation of food, absorption of saaram from the digested food are done by this Asayam.
3. **Malavasayam** (Excretory organ for solid waste) -Large Intestine, especially rectum, the place where the expulsion of undigested food parts and flatus takes place.
4. **Chalavasayam** (Excretory organ for liquid waste)- Urinary Bladder, kidney. Site of the formation and excretion of urine.
5. **Sukkilavasyam** (Genital organs.) –Site of production and development of spermatazoa and ovum.

## **10. KOSAM – 5 (FIVE STATUS OF THE HUMAN BODY OR SHEATH)**

1. Annamaya Kosam -Gastro intestinal system
2. Pranamaya Kosam - Respiratory system

3. Manomaya Kosam - Mental System
4. Vignanamaya Kosam - Nervous system and higher intellect
5. Aananthamaya Kosam -Reproductive system

## 11. AATHARAM – 6 (*STATIONS OF SOUL*) “ஓம் ந ம சி வா ய”

### 1. Moolatharam

Situated at the base of spinal column between genital and anal orifice and beneath the perineum. Letter “ஓம்” is stationed here.

### 2. Swathitanam

Located 2 fingerwidths above the Moolaathaaram, (i.e.) midway between genital and navel region. Letter “ந” is inherently present here. Earth element is attributed to this region.

### 3. Manipooragam

Located 8 fingerwidths above the Swathitanam, (i.e.) at the naval center. Letter “ம” is inherently present here. Element is water.

### 4. Anakatham

Located 10 fingerwidths above Manipooragam, (i.e.) location of heart. Letter found is “சி”. Element is fire.

### 5. Visuthi

Located 10 fingerwidths above the Anakatham (i.e.) located in throat. Letter “வா” is inherently present. Element is Air.

### 6. Aakinai

Situated between the two eyebrows. Letter “ய” is inherently present here. Element is Space

## **12. MANDALAM – 3 (*REGIONS*)**

### **1. Thee Mandalam (fire zone)**

Fire Zone is found 2 finger widths above the Moolaathaaram

### **2. Gnayiru Mandalam (Solar zone)**

Solar zone, located 4 finger widths above the umbilicus.

### **3. Thingal Mandalam (lunar zone)**

Lunar zone is situated at the center of two eye brows

## **13. MALAM – 3 (*THREE IMPURITIES OF THE SOUL*)**

### **1. Aanavam**

This act clouds the clarity of thought, cognitive power of the soul, yielding to the egocentric consciousness like ‘I’ and ‘Mine’ claiming everything to be his own (Greediness).

### **2. Kanmam**

Goes in collaboration with the other two responsible for incurring Paavam (the Sin) and Punniyam (Sanctity / virtuous deed).

### **3. Mayai**

Serves as an obstacle due to the mentality of claiming ownership of the others property and thereby inviting troubles.

## **14. THODAM- 3 (*THREE HUMOURS*)**

1. Vali (Vatham) - It is the creative force formed by combination of Vaayu and Aakaya bootham
2. Azhal (Pitham) - It is the protective force. Formed by Thee bootham
3. Iyam (Kabam ) -It is the destructive force. Formed by Mann and Neer Bootham

## **15. EADANAI -3 (*PHYSICAL BINDINGS*)**

1. Porul Patru - Materialistic affinity
2. Puthalvar Patru - Sibling / Familial bonding
3. Ulaga Patru - Worldly affections

## **16. GUNAM – 3 (*THREE COSMIC QUALITIES*)**

### **1. Sathuvam (Characters of Renunciations or Ascetic Virtues)**

The grace, control of senses, wisdom, penance, generosity, Excellence, calmness, truthfulness is the 8 qualities attributed to their benevolent trait.

### **2. Raasatham (Royal character)**

Enthusiasm, wisdom, valour, virtue, penance, offering gift, art of Learning, listening are the 8 traits

### **3. Thamasam (Carnal / Immoral Character)**

Immorality, lust, anger, murderousness, violation of justice, gluttony, falsehood, forgetfulness, fraudulence, etc.

## **17. VINAI – 2 (ACT)**

- |              |   |                              |
|--------------|---|------------------------------|
| 1. Nalvinai  | - | Good Acts (Meritorious acts) |
| 2. Theevinai | - | Bad Acts (Sinful acts)       |

## **18. RAGAM – 8 (THE EIGHT PASSIONS)**

- |               |   |   |
|---------------|---|---|
| 1. Kaamam     | - | Lust  |
| 2. Kurotham   | - | Grudge / Hatred                               |
| 3. Ulobam     | - | Stingy  |
| 4. Moham      | - | Infatuation                                   |
| 5. Matham     | - | Rut (The feeling of high ego towards oneself) |
| 6. Marcharyam | - | Internal Conflict, Envy                       |
| 7. Idumbai    | - | Mockery                                       |
| 8. Ahankaram  | - | High Ego                                      |



## 19. AVATHAI – 5 (FIVE STATES OF CONSCIOUSNESS)

1. **Ninaivu** - State of wakefulness with the 14 karuvikaranathigal in all vibrancy (5 Pulan, 5 Kanmaenthiriyam and 4 Karanam) and is able to experience the pleasures and pains
2. **Kanavu**– State of dreams. In this 10 karuvikaranathigal (5 Pulan, 5 Kanmaenthiriyam) except karanam all lies dormant in the neck.
3. **Urakkam** - State of Sleep after which one cannot recapitulate what is seen or heard. The respiration lies in the heart.
4. **Perurakkam** - State of Repose (Tranquil or Peaceful State). The Jeevaathma lies in the naabi, producing the respiration.
5. **Uyirpadakkam** – Oblivious of the surroundings. The Jeevaathma is deeply immersed in Moolaathaaram resulting in a state of unawareness.

### 3. A.3.THE UYIR THATHUKKAL

The physiological units of the Human body are,

- Vali (Vatham),
- Azhal (Pitham) and
- Iyyam (Kapham).

They are also formed by the combination of the five basic elements. Accordingly Vali is formed by the combination of Vali (Air) and Aagayam (Space). This is the Creative force. Azhal is formed by Thee (Fire). This is the Force of Preservation. Iyyam is formed by Mann (Earth) and Neer (Water). This is the Destructive Force. These three humors are in the ratio 4:2:1 in equilibrium which is a healthy normal Condition. They are called as the life forces or humours.

"பொங்கிய தைந்துக்குள் பொல்லாதது இம் மூன்றுதான்

தங்கிய வாயு சமத்தன் மகாவாதம்

பங்கிய வன்னியால் பகுந்தது பித்தமே

பகுந்த சலத்தில் பரிசிக்கும் நல்லையும்

வகுந்த இம்முன்றால் வளர்ந்தது நோயெல்லாம்  
அகுந்தது தானறிந்து அளவிட்ட யோகிகள்  
மகிழ்ந்தே யிதில் நின்ற மயக்கம் அறிவாறே"

-பதினென் சித்தர் நாடி சாஸ்திரம்

#### THE FORMATION OF UYIR THATHUKKAL,

மூவகை நாடியும் உயிர் தாதுவும்

"தாது முறையே தனிஇடை வாதமாம்  
போதுறு பின்கலை புகன்றது பித்தமாம்  
மாது சுழுமுனை வழங்கிடும் ஐயமாம்  
ஒது முறை பார்த்து உணர்ந்தவர் சித்தரே"

-பதினென் சித்தர் நாடி சாஸ்திரம்

மூவகை வாயுவும் உயிர் தாதுவும்

"உணர்ந்த அபானன் உறும் அந்த வாதத்தில்  
புணர்ந்த பிராணன் புகும் அந்தப் பித்தத்தில்  
அணைந்த சமானன் அடங்கும் கபத்தோடு  
இணைந்திவை மூன்றுக்கு எடுத்த குறி ஒன்றே"

-பதினென் சித்தர் நாடி சாஸ்திரம்

The Vali naadi is formed by the combination of Abanan and Idagalai.

The Azhal naadi is formed by the combination of Piranan and Pinkalai.

The Iyya naadi is formed by the combination of Samanan and Suzhumunai.

#### I.Vali (Vatham)

Vali is soft, fine and the temperate (coolness and hotness) which could be felt by touch.

"நெளிந்திட்ட வாதமபானத்தைப் பற்றி  
நிறைந்திடையைச் சேர்ந்துந்திக் கீழே நின்று  
குளிந்திட்ட மூடமதூ டெழுந்து காமக்  
கோடியிடையைப் பற்றியெழுங் றொக்கை நாடி  
நிணமான பொருத்திடமும் ரோமக் காலும்  
நிறைவாகி மாங்கிசமெல் லாம்பரந்து"  
-வைத்திய சதகம்

According to **Vaithya Sathakam**, Vali dwells in the following places:

Umbilicus, Rectum, Faecal matter, Abdomen, Anal region, Bones, Hip joints,  
Navel Plexus, Joints, Hair follicle and Muscles.

"அறிந்திடும் வாத மடங்கு மலத்தினில்"

-திருமூலர்

"நாமென்ற வாதத்துக் கிருப்பிடமே கேளாய்  
நாபிக்குக் கீழென்று நவில லாகும்"

-Yugimuni

According to Sage Thirumoolar and Sage Yugi muni, the location of Vatham is the anus and the sub navel region.

### ***Properties of Vali***

"ஒழுங்குடனே தாதேழ் மூச்சோங்கி இயங்க  
எழுச்சிபெற எப்பணியுமாற்ற எழுந்திரிய  
வேகம் புலன்களுக்கு மேவச் சுறுசுறுப்பு  
வாகளிக்கும் மாந்தர்க்கு வாயு"

-சித்த மருத்துவாங்கச் சுருக்கம்

The following are the natural properties of Vali

- 1) To stimulate the respiration
- 2) To activate the body, mind and the intellect.

- 3) To activate the fourteen different types of natural reflexes or urges.
- 4) To activate the seven physical constituents in functional co-ordination.
- 5) To strengthen the five sense organs.

In the above process Vatham plays a vital role in assisting the body functions.

## **II. Azhal (Pitham)**

The nature of Azhal is Atomic. It is sharp and hot. The ghee becomes watery, salt crystallises and jaggery melts because of heat. The heat of Azhal is responsible for many actions and their reactions.

### ***The sites of Azhal***

According to **Vaithiya Sathagam**, the Pingalai, Urinary bladder, Stomach and Heart are the places where Azhal is sustained. In addition to the above places, the umbilicus, epigastric region, stomach, sweat, saliva, blood, essence of food, eyes and skin are also the places where Azhal sustains. Yugi muni says that, the Azhal resides in urine and in the places below the neck region.

### ***The character of Azhal***

Azhal is responsible for the digestion, vision, maintenance of the body temperature, hunger, thirst, taste etc. Its other functions include thought, knowledge, strength and softness.

### ***The functions of Azhal***

- 1) Maintenance of body temperature
- 2) Produces reddish or yellowish colour of the body.
- 3) Produce heat energy on digestion of food.
- 4) Produces sweating
- 5) Induces giddiness.
- 6) Produces blood and the excess blood is let out.
- 7) Gives yellowish colouration to the skin, faeces and urine

### ***Types of Azhal***

#### **1. Aakkanal – Anila Pitham or Prasaka pitham – The fire of digestion.**

It lies between the stomach and the intestine and causes digestion and dries up the moist ingested substance.

#### **2. Vanna eri – Ranjaga pitham – Blood promoting fire**

This fire lies in the stomach and gives red colour to the chyle and produces blood. It improves blood.

#### **3. Aatralanki – Saathaga pitham – The fire of achievement**

It gives energy to do the work.

#### **4. Ulloli thee – Prasaka pitham – The fire of brightness.**

It gives colour, complexion and lusture to the skin.

#### **5. Nokku Azhal – Alosaga pitham – The fire of vision.**

It lies within the eyes and causes the faculty of vision. It helps to visualize things.

### **III. Iyyam (Kapam)**

#### ***The nature of Iyyam***

Greasy, cool, dull, viscous, soft and compact are the natures of Iyyam.

#### ***Sites of Iyyam***

Head, tongue, eyes, nose, throat, thorax, bone, bone marrow, Joints, blood, fat, sperm and colon are the sites of Iyyam. It also lies in stomach, spleen, the pancreas, chyle and lymph.

#### ***The natural quality of Iyyam***

Stability, greasiness, formation of joints, the ability to withstand hunger, thirst, sorrow and distress are the qualities. It also helps to withstand sufferings.

### ***Functions of Iyyam***

Greasiness, strength, roughness, knowledge, cool, growth, heaviness of bone, restriction of joint movements, pallor, indigestion, deep sleep and to have a sweet taste in tongue are the functions of Iyyam. The skin, eyes, faeces and urine are white in colour due to the influence of Iyyam.

### **Five types of Iyyam**

#### **1. Azhal Iyyam -Avalambagam**

Heart is the seat of Avalambagam. It controls all other 4 Iyyams

#### **2. Neerpi iyyam -Kilethagam**

Its location is stomach. It gives moisture and softness to ingested food.

#### **3. Suvai kaan iyyam – pothagam**

Its location is tongue. It is responsible for the sense of taste.

#### **4. Niraivur iyyam – Tharpagam**

It gives coolness to the eyes.

#### **5. Ondri iyyam – Santhigam**

It gives lubrication to the bones particularly in the joints

### **3. A.4. THE UDAL THATHUKKAL**

Udal Thathukkal are the basic physical constituents of the body. They are also constituted by the Five Elements.

### **SEVEN PHYSICAL CONSTITUENTS OF THE BODY**

**1. Saaram** -This gives mental and physical perseverance.

**2. Senneer** -Imparts colour to the body and nourishes the body

- 3. Oon** -It gives shape to the body according to the physical activity and plasters the skeleton to give the body a plumpy appearance.
- 4. Kozhuppu** -It lubricates the joints and other parts of the body for smooth functioning.
- 5. Enbu** -Supports the frame and responsible for the postures and movements of the body.
- 6. Moolai** -It occupies the medulla of the bones and gives strength and softness to them.
- 7. Sukkilam** -It is responsible for reproduction.

### **3. A.5. UDAL THEE (Four kinds of body fire)**

There are four kinds of body fire. They are Samaakkini, Vishamaakkini, Deeshaakkini and Manthaakkini.

#### **1. Samaakkini**

The digestive fire is called as Samaakkini. This is constituted by Samana Vayu, Anala Pitham and kilethaga Kapham. If they are in normal proportion, then it is called as Samaakkini. It is responsible for the normal digestion of the food

#### **2. Vishamaakkini**

Due to deranged and displaced Samana Vayu, it takes longer time for digestion of normal food. It is responsible for indigestion due to delay in digestive process.

#### **3. Deeshaakkini**

The Samana vayu blends up with the Azhal, which leads to increased Anala Pitham, so food is digested rapidly.

#### **4. Manthaakkini**

The Samana vayu conjugates with the Iyyam, which leads to increased Kilethaga Kapham. Therefore food is sluggishly digested for a very longer period leading to abdominal pain, distention, heaviness of the body etc.

### **3. A.6.THINAI**

*There are five thinai (the land)*

1. Kurinchi - Mountain and associated areas
2. Mullai - Forest and associated areas
3. Marudham - Agricultural land and associated areas
4. Neidhal - The coastal and associated areas
5. Paalai - Desert and associated areas

### **3. A.7. KAALAM**

Ancient Tamilians divided a year into six different seasons known as Perumpozhudhu and likewise the day into six segments which are known as Sirupozhudhu

#### **Perumpozhudhu:**

A year is divided into six seasons. They are as follows

- Kaarkalam – Monsoon season (August 16 – October 15)
- Koothirkalam – Postmonsoon season (October 16 – December 15)
- Munpanikalam- Early winter season (December 16 – February 15)
- Pin panikalam – Late winter season (February 16 – April 15)
- Illavenilkalam – Early summer season (April 16 – June 15)
- Mudhuvenilkalam – Late summer season (June 16 – August 15)



### **Sirupozhuthu**

A day is divided into six yamams. They are,

1. Maalai (Evening),
2. Idaiyammam (Midnight),
3. Vaikarai (Dawn),
4. Kaalai (Morning),
5. Nannpakal (Noon),
6. Erpaddu (Afternoon).

Each perumpozhuthu and sirupozhuthu is associated with the three humors naturally.

### **3. A.8.FOURTEEN NATURAL REFLEXES/ URGES**

The natural reflexes excretory, protective and preventive mechanisms are responsible for the urges and instincts. They are 14 in number,

1. Vatham (Flatus)
2. Thummal (Sneezing)
3. Siruneer (Micturition)
4. Malam (Defaecation)
5. Kottavi (Act of yawning)
6. Pasi (Sensation of hunger)
7. Neer vetkai (Sensation of thirst)
8. Erumal (Coughing)
9. Ellaipu (Fatigue)
10. Thookam (Sleep)

11. Vaanthi (Vomiting)
12. Kaneer (Tears)
13. Sukilam (Semen)
14. Suvasam (Breathing)

These natural reflexes are said to be an indication of normal functioning of our body. A proper maintenance should be carried out and they should not be restrained with force.

## 3.B.SIDDHA PATHOLOGY

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### 3.B.1. KUGARANA NILAI IN SIDDHA MEDICINE

According to Siddha System, human body sustains the state of healthy living via keeping the Three Humours- Vatham, Pitham and Kabam in equilibrium, influenced by dietary habits, daily activities and the environment around. The three humours represent the five basic elements or Bhuthas. In case this equilibrium is disturbed, it leads to a condition known as disease. It is basically the derangement of five elements, which in turn alters the Three Humors. There can either be a decrease or increase in the balance.

### 3. B.2. DISEASE

Disease is also known by other names viz sickness, distemper, suffering and ailment, distress of mind, chronic disease and dreadful illness.

### 3.B.3. THE CHARACTERISTICS FEATURE OF DISEASE

Diseases are of two kinds:

- i. Pertaining to the body
- ii. Pertaining to the mind according to the variation of the three humors.

#### 1. Causes of Disease

Excepting the disease caused by our previous births, the disease is normally caused by the disparities in our food habits and actions. This has been rightly quoted in the following verses by Sage Thiruvalluvar,

"மிகினும் குறையினும் நோய்செய்யும் நூலோர்

வளிமுதலா வெண்ணிய மூன்று"

-திருவள்ளுவர்

The food and actions of a person should be in harmony with the nature of his body. Any increase or decrease in a humor viz. Vatham, Pitham, Kabam leads to the derangement of the three humors. The acceptance of food means the taste and quality of the food eaten and a person's ability to digest. 'Action'

mean his good words, deeds or bad actions. According to Thiruvalluvar, the disease is caused due to the increase or decrease of three humors causing the upset of equilibrium.

So disease is a condition in which there is derangement in the five elements, which alters the three humors, reflected in turn in the seven physical constituents. The change could be an increase or decrease in the humours. This shows the following signs as per vitiation of the individual humour.

### நோய் பிறக்கும் வகை

"பிணியினுற் பத்தியைப் பேசுவேன் பிணிமுதல்  
வாதபித் தங்கப் மன்மந்திரி தந்திரி  
வீதமா யுடலரண் மெய்ப்புர வரசுசெய்  
முறைசெயு மாதலான் முதற்புர மென்றுட  
கறைகுவ ராரிய ரதன்பரி வாரமா  
நோய்க்கண மிகுதியி னணுகுநுட் பமதாய்ப்  
பேய்க்கண மாமவை பெரும்பசி தாகுமூர்  
வழிநடை வெயின்மழை மலிதணீர் நனைவுடன்  
மந்தமாங் காரமாய் வார்த்தையா டுத(ற்)றுயில்  
வந்தவை விலக்குதன் மாதரைக் கூடுதல்'  
வெந்தறு கட்கதம் வீரமாய்ச் சுமத்தலும்  
மலசல பந்தனை வருமித னனமிகப்  
பெலமுறு நோய்களும் பிறப்பதும் நிச்சயம்."

- தேரையர் காப்பியம்

As per Theraiyar, the cause of disease is vitiated Vatha, Pitha and Kaba, increased appetite, increased thirst, excessive hot, anger, constipation, dysuria polluted water.

## 2. QUANTITATIVE CHANGES OF UYIR THATHUKKAL

HUMOUR	INCREASED	DECREASED
<b>VALI</b> <b>(Vatham)</b>	Wasting, blackish discoloration, affinity to hot foods, tremors, distended abdomen, constipation, weakness, insomnia, weakness in sense organs, giddiness and laziness.	Body pain, feeble voice, and diminished capability of the brain, decreased intellectual quotient, syncope and increased kaba condition.
<b>AZHAL</b> <b>(Pitham)</b>	Yellowish discoloration of conjunctiva, skin, urine and faeces, polyphagia, polydypsia, dyspepsia, burning sensation all over the body and decreased sleep.	Loss of appetite, cold, pallor and features of increased kabam.
<b>IYYAM</b> <b>(Kabham)</b>	Loss of appetite, excessive salivation, diminished activity, heaviness, pallor, cold, decreased physical constituents, dyspnoea, flatulence, cough and excessive sleep.	Giddiness, dryness of the joints and prominence of bones. Profuse sweating in the hair follicles and palpitation.

### 3. UDAL THATHUKAL

These are the changes produced when Udal thathukkal are affected.

UDAL KATTUKKAL	INCREASED FEATURES	DECREASED FEATURES
1.SARAM	Loss of appetite, excessive salivation, diminished activity, heaviness, pallor, cold, decreased physical constituents, dyspnoea, flatulence, cough & excessive sleep.	Dryness of skin, tiredness, loss of weight, lassitude and irritability while hearing louder sounds.
2.SENNEER	Boils in different parts of the body, spleenomegaly, tumours, pricking pain, loss of appetite, haematuria, hypertension, reddish eye and skin, leprosy and jaundice.	Affinity to sour and cold food, nervous, debility, dryness and pallor.
3.OON	Tubercular adenitis, venereal diseases, extra growth around neck, cheeks, abdomen, thigh and genitalia.	Lethargic sense organs, pain in the joints, muscle wasting in mandibular region, gluteal region, penis and thighs.
4.KOZHUPPU	Identical feature of increased flesh, tiredness, dyspnoea on exertion, extra musculature in gluteal region, external genitalia, chest, abdomen and thighs.	Loins pain, spleenomegaly and emaciation.

<b>5.ENBU</b>	Excessive ossification and dentition.	Joint pain, falling of teeth, falling and splitting of hairs and nails.
<b>6.MOOLAI</b>	Heaviness of the body and eyes, swollen interphalangeal joints, oliguria and non-healing ulcers.	Osteoporosis & Blurred vision.
<b>7.SUKKILAM (OR) SURONITHAM</b>	Increased sexual activity, urinary calculi.	Dribbling of sukkilam/ suronitham or senner during coitus, pricking pain in the testis & inflamed and contused external genitalia.

#### 4.KAALAM

Change in Elementary conditions of the external world has its corresponding change in the human organs. They are as follows:

KALAM	KUTTRAM	STATE OF KUTTRAM
<b>1. Karkaalam</b> <b>(Rainy season)</b> (Aavani – Puratasi) (Aug 16 – Oct 15)	Vatham ↑↑ Pitham ↑ Kabam (--)	Ectopic escalation Insitu escalation Restitution
<b>2. Koothir Kaalam</b> <b>(Postrainy season)</b> (Iypasi – Karthigai) (Oct 16 – Dec 15)	Vatham (--) Pitham ↑↑ Kabam (--)	Restitution Ectopic escalation Restitution
<b>3. MunpaniKaalam</b> <b>(Winter season)</b> (Markazhi – Thai) (Dec 16 – Feb 15)	Vatham (--) Pitham (--) Kabam (--)	Restitution Restitution Restitution
<b>4. Pinpani Kaalam</b> <b>(Post winter)</b> (Masi – Panguni) (Feb 16 –Apr 15)	Vatham (--) Pitham (--) Kabam ↑	Restitution Restitution Insitu escalation
<b>5. Elavenir Kaalam</b> <b>(Summer)</b> (Chithirai–Vaikasi) (Apr 16 – Jun 15)	Vatham (--) Pitham (--) Kabam ↑↑	Restitution Restitution Ectopic escalation
<b>6. MudhuvenirKaalam</b> <b>(Post summer)</b> (Aani – Aadi) (Jun 16 – Aug 15)	Vatham ↑ Kabam (--)	Insitu escalation Restitution



## 5.THINAI

S. NO	THINAI	LAND	HUMORS
1.	Kurinchi	Mountain and its surroundings Hilly terrain	Kabam
2.	Mullai	Forest and its surroundings Forest ranges	Pitham
3.	Marutham	Farm land and its surroundings Cultivable lands	All three humors are in equilibrium
4.	Neithal	Sea shore and its adjoining areas, Coastal belt	Vatham
5.	Palai	Desert and its surroundings Arid zone	All three humors are affected.

## 6. Alteration in Reflexes (14 VEGANGAL)

There are 14 natural reflexes involved in the physiology of normal human beings. If willfully restrained or suppressed, the following are resulted.

### 1. Vatham (Flatus)

This urge should not be suppressed. If it is suppressed it leads to chest pain, epigastric pain. Abdominal pain, ache, constipation, dysuria and indigestion predominate.

### 2. Thummal (Sneezing)

If restrained, it leads to headache, facial pain, low back pain and neuritic pain in the sense organs.

### 3. Siruneer (Urine)

If restrained, it leads to urinary retention, urethral ulcer, joint pain, pain in the penis, gas formation in abdomen.

### 4. Malam (Faeces)

If restrained, it leads to pain in the knee joints, headache, general weakness, flatulence and other diseases may also originate.

### 5. Kottavi (Yawning)

If restrained, it leads to indigestion, leucorrhoea, and abdominal disorders.

**6. Pasi (Hunger)**

If restrained, it leads to the tiredness of all organs, emaciation, syncope, apathetic face and joint pain.

**7. Neer vetkai (Thirst)**

If restrained, it leads to the affection of all organs and pain may supervene.

**8. Kaasam (Cough)**

If it is restrained, severe cough, bad breath and heart diseases will be resulted.

**9. Ilaippu (Exhaustiveness)**

If restrained, it will lead to fainting, urinary disorders and rigor.

**10. Nithirai (Sleep)**

All organs will get rest only during sleep. So it should not be avoided. If disturbed it will lead to headache, pain in the eyes, deafness and slurred speech.

**11. Vaanthi (Vomiting)**

If restrained, it leads to itching and symptoms of increased Pitham.

**12. Kanneer (Tears)**

If it is restrained, it will lead to Sinusitis, headache, eye diseases and Chest pain.

**13. Sukkilam (Semen)**

If it is restrained, there will be joint pain, difficulty in urination, fever and chest pain.

**14. Swaasam (Breathing)**

If it is restrained, there will be cough, abdominal discomfort and Anorexia.

### 3. C.DIAGNOSTIC METHODOLOGY

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The Diagnostic methodology in Siddha system is unique as it is made purely on the basis of clinical acumen of the physician. The diagnosis is arrived from,

- Poriyal arithal and Pulanal arithal (examination of sense organs)
- Vinaathal (Interrogation)
- Envagai thervu (Eight fold examination)
- Manikkadai nool (Wrist circumference sign)
- Sothidam ( Astrology)
- Assessment of deranged three Dosham (humours), Udal thathukal and 96 principles.

#### PORIYAL ARIDHAL

The physician should examine the patient's porigal by his porigal.

- |          |   |                                |
|----------|---|--------------------------------|
| 1. Mei   | - | To feel all types of sensation |
| 2. Vaai  | - | For knowing taste              |
| 3. Kan   | - | For vision                     |
| 4. Mooku | - | For knowing the smell          |
| 5. Sevi  | - | For hearing                    |

#### PULANAL ARITHAL

The physician should examine the patient's pulangal by his porigal & Pulangal

- |              |   |        |
|--------------|---|--------|
| 1. Hearing   | - | Ear    |
| 2. Vision    | - | Eye    |
| 3. Taste     | - | Tongue |
| 4. Sensation | - | Skin   |
| 5. Smell     | - | Nose   |

## VINAADHAL (INTERROGATION)

The physician should interrogate the patient's name, age, occupation, native place, Socio – economic status, dietary habits, present complaints, history of present illness, aggravating factors, history of previous illness.

## ENVAGAI THERVUGAL

“அகத்துறு நோயை கரத்தாம லகம்போல்  
பகுத்தறிவீர் நாடிப் பரிசம் - தொகுத்த நிறம்  
கட்டுவகைச் சொல்மொழிகண் கண்ட மல மூத்திரம் நா  
எட்டுவகை யாலு மறிவீர்”

- அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

According to Agathiyar Vaithiya Sinthaamani Venba – 4000, the Envagaithervu Includes Naadi (Pulse) Naa (Tongue), Niram (Color), Mozhi (Voice), Vizhi (Eyes), Malam (Faeces), Neer (Urine) and Sparisam (Touch & palpation).

"நாடி பரிசம் நாநிறம் மொழிவிழி  
மலம் மூத்திரம் மருத்துவராயுதம்"

-தேரையர்.

"மெய்குறி நிறந்தொனி விழிநாவிருமலம் கைக்குறி"

-தேரையர்.

As per Saint Therayar, the eight methods of diagnosis are Naadi (Pulse) Naa (Tongue), Niram (Color), Mozhi (Voice), Vizhi (Eyes), Malam (Faeces), Neer (Urine) and Sparisam (Touch & palpation).

பதினெண் சித்தர் நாடி சாத்திரம்

"பாரீர்நாடி யறிந்து உணர்ந்து பரமன் செயலும் பிணிமுறையும்  
நீரேயோடு மலசலமும் நிறமுங் குணமு முகக்குறியும்  
சாரே யிணங்குங்குழல் மடவீர்காலன் றேகம் வயதிளமை  
தேரேயறியுமுகநாடி நெறிங்குறியுஞ் செறியுஞ் சொல்வோமே"

-பதினெண் சித்தர் நாடி சாத்திரம்

As per Sage Agathiyar, Naadi (pulse), Malam (stools), Salam (urine), Niram (complexion), Gunam (character), MugaKuri (facies), Thegam (constitution), Vayadhu (age), Elamai are the diagnostic tools.

"தொகுக்கலுற்ற அட்டவிதப் பரீட்சை தன்னை  
துலக்கமுரும் பண்டிதரே தெளிவதாகப்  
பகுக்கரிய நாடியை நீ பிடித்துப் பாரு  
பகர்கின்ர வார்தையைப்பார் நாவைப்பாரு  
வகுக்கரிய தேகமதைத் தொட்டுப்பாரு  
வளமான சரீரத்தின் நிறத்தைப் பாரு  
சகிக்கரிய மலத்தைப்பார் சலத்தைப் பாரு  
சார்ந்தவிழி தனைப்பார்த்துத் தெளிவாய்க் கானே"  
-கண்ணுசாமிப்பரம்பரை வைத்தியம்

According to literature KannuSaami Paramparai Vaithiyam, Naadi, Naa, Thegam, Thodu unarvu, Niram, Malam, Salam and Vizhi are the diagnostic tools.

**அகத்தியர் வைத்திய ரத்தின சுருக்கம்**

"நாடியால் முன்னோர் சொன்ன நற்குறிகுணங்களாகும்  
நீடிய விழியினாலும் நின்ற நாட்குறிப்பினாலும்  
வாடிய மேனியாலும் மலமோடு நீரினாலுஞ்  
சூடிய வியாதி தன்னைச் சும் பெற வறிந்து சொல்லே"

According to Agathiyar Vaithiya Rathina Surukkam, the diagnostic tools are Naadi (Pulse), Vizhi (Eyes), Kurigunam (Signs), Nalkurippu (Chronology), Maeni (Constitution), Malam (Stools) And Neer (Urine).

**பரிபூரண நாடி**

"அட்டமாங்கிரிகடன்னை யறிந்து நீயுணரவேண்டில்  
வட்டமாமுகங்கள்பல்லும் வாயதில்நாக்குங்காயங்  
கட்டருமலங்கள் கைதனில்நாடிதானுந்  
திட்டமாயறிந்துசெய்யுந் திறமுள்ளவயிததியராமே"

According to the Paripoorana Naadi, the diagnostic parameters are Mugam (Facies), Pal (Teeth), Vai (Mouth), Naakku (Tongue), Kaayam, Irumalam, Naadi (Pulse).

**தன்வந்திரி பகவான்**

"திருமறை முனிவன் கூறும் வாகடச் செய்கைதன்னில்  
வருபல வியாதியான வகையறி குவதே தென்னில்  
உருவறு நாடி யாலு மொண்முக மலநீ ராலும்  
தெரிவிழி நாவினாலுந் தந்தலக் கணத்தி னாலும்"

**-தன்வந்திரி (ப.சி.நாடி சாத்திரம்)**

According to Dhanvantri Vaithiyam, the diagnostic parameters are Naadi (Pulse), Mugam (Facies), Malam (Stools), Neer (Urine), Udal (Constitution), Vizhi (Eyes), Naa (Tongue), Pal (Teeth).

**பதினெண் சித்தர் நாடி சாத்திரம்**

"திரணியதோர் நாடிகண்கள் சத்தத்தோடு  
தேகத்தின் துபரிசம் வானம் நாக்கு  
இரணமலம் இவைகளெட்டும் இதம்படவே  
தான்பார்த்துக் குறிப்புங் கண்டு  
பரனருளாற் பெரியோர்கட்பாதம் போற்றிப்  
பண்புதவறாமற் பண்டிதணஞ் செய்வீரே"

**-பதினெண் சித்தர் நாடி சாத்திரம்**

According to the above literature, the diagnostic tools are Naadi (Pulse), Kan (Eyes), Sattham (Voice), Thegam (Constitution), Sparisam and Naa (Tongue).

### **1.TONGUE EXAMINATION (நாத்தேர்வு)**

"முள்ளாய் வெடித்து கருத்தான் முன்பின் வெளுத்து  
தள்ளாநீ ருண்டோ சேர்ந்தால் பசந்தால் - எல்லாம்  
நடுவாம் பலபலவாம் நற்சன்னி முன்னோய்  
ஓடுநீரில் நாவின்னோது."

**-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000**

As per Agathiyar Vaithiya Sinthaamani Venba – 4000, fissured and black tongue represent vitiated Vatha humor, pallor represents Kabam , green colour represents Pitha humor and mixed appearance of these features resembles Sanni noi.

“பலமான ருசியறியும் நாவின் கூற்றைப்  
பகர்கின்றேன் வாதரோகி யின்றன் நாவு  
கலமாக வெடித்து கறுத்திருக்கு முட்போல்  
கண்டு கொள்வாய் பித்தரோகியின்றன் நாவு  
நலமுற சிவந்து பச்சென்றிருக்கும் நட்பிலா  
சிலேத்துமரோகி யின்றன் நாவு  
தலமதனிலுற்றமுதி யோர்கள் சொன்ன  
தன்மையடி தடித்து வெளுத்திருக்கும்பாரே”  
-கண்ணுசாமி பரம்பரை வைத்தியம்

In Vali derangement, tongue will be cold, rough, furrowed and tastes pungent. In Azhal, it will be red or yellow and kaippu taste will be sensed. In Iyyam, it is pale, sticky and sweet taste will be lingering. In depletion of Thontham, tongue will be dark with raised papillae and dryness.

Examination of tongue also includes the salivary examination. The following stanza describes salivary examination

“எச்சிற் பரிவாயிளநீர்பால் வெண்ணெயனை  
யெச்சிற் பரிவா யிலகுநுரை - யெச்சிற்  
களியடைமா நன்றுமுதற் நண்ணான்கு முன்னிக்  
களியடைமா மேவுபிட கா.”

-சிகிச்சாரத்ன தீபம்

## 2. EXAMINATION OF COMPLEXION (உடல் நிறத் தேர்வு)

“உரைத்தகற்ப் பான்வாத ரோகிபித்த ரோகி  
அரைத்தமஞ்ச னைக்குளித்தோன் ஆவான் - இரத்தம்  
குளித்தவனு மாவான் கொடும்சிலேத்தும ரோகி  
வெளுத்திடுவான் தொந்தரோகியெ..”

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

"மூன்றாகும் வாதபித்த சிலேத்து மத்தால்  
மிகுந்தமுறத் தொந்தித்த ரோகி தேகம்  
தோன்றாத சீதய வுஷ்ணங் காலமூன்றுந்  
தொகுத்தேன்யான் திரேகத்தி னிறத்தைக் கேளு  
ஊன்றாத வாதவுடல் கறுத்துக் காணும்  
ஊரியபித்த முடல் சிவப்புப் பசுமைகாணும்  
போன்றாத வையவுடல் வெண்மை தோன்றும்  
பொருந்துந்தொந்த ரோகவுடற் கிவற்றை யொக்கும்"

-கண்ணுசாமி பரம்பரை வைத்தியம்

"பனைவாத தேகநிறங் கறுத்து நிற்கும்  
பைத்தியதேக நிறமஞ்சள் சிவப்பதாமே  
தாமே சிலேட்டு மதேகநிறம் வெளுப்பு தான்  
தொந்தேகம் இந்நால் விதமாயநிற்கும்"

-தன்வந்திரி (பதினெண் சித்தர் நாடி சாத்திரம்)

In Vali, Azhal and Iyyam vitiations, the colour of the body will be dark, yellow or red and fair respectively.



### 3. VOICE EXAMINATION (ஒலித் தேர்வு)

“பலரோகி வார்த்தைப் பலவிதமாய் வாதத்  
தலைரோகி வார்த்தைச் சமமாகும் - நிலைகடந்த  
பித்தரோ கிக்குடயர்ந்த பேச்சுண்டாம் ச்லேட்டுமந்தான்  
சத்தம்ஈ னச்சுரமாய் தான்.”

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

"பார்ப்பதான் வாதரோகி யின்றன் வார்த்தை  
பக்குவமாய்ச் சமசத்த மாயிருக்கும்  
சேர்ப்பதுதான் பித்தரோகியின்றன் வார்த்தை  
செப்பக்கோள பெலத்துமே யுறத்திருக்கும்  
ஏற்பதுதான் ஐயரோகி யின்றன் வார்த்தை  
யெளிதாகச் சிறுத்திருக்குமியல்பிதாகும்  
கேசற்கவே யிம்முன்றுந் தொந்தமாகில்  
கூசாமற் பலவிதமாய் பேசுவாரே"

- கண்ணுசாமி பரம்பரை வைத்தியம்

"மாமயிலே சத்தமது அறிய வேண்டில்  
வாதரோகிசம தொனியாய் வார்த்தை பேசும்  
ஈமமுள்ள பித்தந்தான் இறைந்த கூறும்  
இயம்பிடும் சிலேத்தும ரோகிக்கீனசத்தம்  
நாமுரைத்தோம் தொந்த ரோகிக்குத் தானிந்த  
நால்விதமாய் மொழிந்த சத்தம் நயந்து காணே"  
-பதினெண் சித்தர் நாடி சாத்திரம்

In vitiation of Vali, Azhal and Iyyam, the voice would be normal, high pitched and shrill or low pitched respectively. By the voice, the strength of the body can be assessed.

#### 4. THE EYE EXAMINATION (கண் தேர்வு)

“கண்கறுத்து நீரோடில் காலாம் நடுவாகில்  
கண்பசக்கும் சொக்கும் கடையாகில் - கண்பீளை  
சாடி வெளுக்குமே சன்னிவாதம் பித்தமுமென்  
றோடியகா மாலை பசக்கும்”

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

As per Agathiyar Vaithiya Sinthaamani Venba – 4000, in vitiated Vali eyes turn black and tears shed. In vitiated Azhal humour , mukkutram and in jaundice yellowish discoloration occurs. In vitiated Iyyam, the eyes turn white.

" உண்மையாய் கண்கள்குறிப் பதைக்கேள் வாதம்  
உற்றவிழி கறுத்துநொந்து நீருங் காணும்  
தண்மையிலாப் பித்தரோகி யின்றன் கண்கள்  
சார்பாகப் பசுமைசிவப் பேறுங் காணும்

வண்மையிலா வையரோகி விழிகள் தானும்  
வளமான வெண்மைநிற மேதா நாதம்  
திண்மையிலாத் தொந்தரோகி யின்றன் கண்கள்  
தீட்டுவாய் பலநிறமென் றறைய லாமே"

-கண்ணுசாமி பரம்பரை வைத்தியம்

"காணுகின்ற வாத ரோகிக்கு கண்கள்  
கருநிறமாய் நொந்துமிகத் தண்ணீர்பாயும்  
பூணுகின்ற பித்தரோகிகடி மஞ்சள் போலிருக்கம்  
சிவப்பு நிறப்பொலிவு தோன்றும்"

-பதினெண் சித்தர் நாடி சாத்திரம்

In Vali disease, the tears is darkened, in Azhal disease they are yellow, in Iyya disease they are whitish in colour and in Thontha disease the tears are multi coloured. In Vali disease there will be excessive tears (epiphora). In disturbance of all the three humuors, eyes would be inflammed and reddish.

## 5. FAECES EXAMINATION (மல தேர்வு)

“கறுத்தமல பந்தமலங் காலாகும் பித்தம்  
சிறுத்தமுட் டிணம்செம்மை சேரும் - பொறுத்தொருக்கால்  
சீதமலந் தில்லையுமாம் சேர்ந்தபல ரோகியாம்  
மீதமலம் எண்ணிறமுமே.”

- அகத்தியர் வைத்திய சிந்தாமனி வெண்பா - 4000

As per Agathiyar Vaithiya Sinthaamani Venba – 4000, in vitiated Vali, the stool is hard and black. In vitiated Azhal, it is hot and red. In vitiated Iyyam it is cool and watery.

"ஒக்குமே வாத நோய் மலத்தைப் பார்க்கில்  
உகந்தமலம் கறுகியே கறுத்திருக்கும்  
மிக்கபித்த நோய்மலத்தை யுற்றுப் பார்க்கில்  
மிகுந்தசிவப்புடன் பசுமை தானுந் தோற்றும்

மைக்குவளை மனேகே ளைய ரோகம்  
மலமதுதான் வெண்மைனிற மாயிருக்கும்  
பக்குவமா யிம்முன்றுந் தொந்திப் பாகில்  
பகருமின் நிறங்கள்வகை பரிந்து காணும்"

-கண்ணுசாமி பரம்பரை வைத்தியம்.

In excacerbated Vali, faeces is hard, dry and black in colour. In Azhal vitiation, it is yellow. In Iyyam, disturbance it is pale.

## 6. URINE EXAMINATION (நீர் தேர்வு)

“வாதரோ கம்தெளிந்தான் மஞ்சளித்தான் மற்றையது  
சீதனுரைத் தார்பலவாம் சேளர்ந்தநோய் - கோதகலா  
முத்திரத்தின் உண்மை மொழிந்தோம் இனிச் சொல்வாம்  
நாத்திரத்தின் உள்ளவகை நாம்.”

-அகத்தியர் வைத்திய சிந்தாமனி வெண்பா - 4000

"ஓங்கிய வாதத்தோர்க்கு நீர்விழுங் குணந்தா நுரைக்கிற  
 பூங்கொடி கறுத்துநொந்து சிறுத்துடன் பொருமி வீழும்  
 பாங்குடன் பித்தத்தோர்க்கும் பசியநீர் சிவந்து காட்டி  
 ஏங்கவே கறுக்கதாக எரித்துடன் கடுத்து வீழும்  
 வீழுமே சிலேற்பனத்தோர் நீர்க்குணம் விளம்பக் கேளாய்  
 நாளுமே வெளத்துறைந்து நலம்பெற வீழுங் கண்டாய்  
 வாள்விழி மானேதொந்த ரோகமா னிடர்க்குத் தானே  
 தாளுநீர் பலநிறந்தா னெனவே சாற்றி னோமே"

- கண்ணுசாமி பரம்பரை வைத்தியம்

‘Neer’ refers to Urine ‘Kuri’ refers to Sign. Theraiyar, one of the renowned authors of Siddha medicine described urine examination and stages of health. He had explained about the colour and consistency of the urine in vitiated humor and disease. He also emphasized the spreading nature of a single drop of oil on the surface of the urine indicating the imbalance of specific dosha and prognosis of disease. Normal urine is straw coloured and odourless. The time of the day and food taken will have an impact on the colour of the urine.

## COLOUR OF URINE

- Yellow colour – similar to straw soaked water – indigestion
- Lemon colour – good digestion
- Reddish yellow – heat in body
- Colour similar to flame of forest red or flame coloured excessive heat
- Colour of saffron – extreme heat

“மாணிக்கம் பால்பிரச மஞ்ச ளிஃதுயிர  
 மாணிக்கம் பால்வரிசை மாறாநீர் - மாணிக்க  
 முத்தம் மாத்ர யொருநாலு மந்தமுனே  
 யுத்தம் மாத்ரமதி யுன்.”

- Sikicharathna Theepam

As per Sikicharathna Theepam,

**COLOUR OF URINE - PROGNOSIS**

- Ruby red or milky white - Poor
- Honey - Slow and take long time
- Golden yellow - Good

**NEIKKURI (நெய்க்குறி)**

“ அருந்து மாறிரதமும் அவிரோதமதாய்  
அஃகல் அலர்தல் அகாலவூன்தவிர்ந்தழற்  
குற்றள வருந்தி உறங்கி வைகறை  
ஆடிகலசத் தாவியே காதுபெய்  
தொரு முகூர்த்தகலைக்குட்படு நீரின்  
நிறக்குறி நெய்க்குறி நிருமித்தல் கடனே”

“ அரவென நீண்டினஃகே வாதம்  
ஆழிபோல் பரவின் அஃதே பித்தம்  
முத்தொத்து நிற்கின் மொழிவதன் கபமே”

**-அகத்தியர் வைத்திய ரத்தின சுருக்கம்**

The spreading pattern of oil drop is the indicative of Vali, Azhal and Iyyam diseases e.g

1. Aravu (Snake Pattern of spread) indicates Vali disease
2. Mothiram (Ring Pattern of spread) indicates Azhal disease
3. Muthu (Pearl Pattern of spread) indicates Iyya disease

In Neikkuri, the rapid spread of oil drop; Pearl beaded and Sieve type of spreading pattern indicates incurable state of the disease. From this, we can assess the prognosis by the Neikkuri.

"இலகுமா மூத்தி ரத்தி லெண்ணையை விட்டுப் பார்க்கில்  
கலக்கஞ் செய் வாதத் தோர்க்குக் காணவே நீள மாய்ப்போம்  
பிலனுறு மெய்யை வாட்டும் பித்தமே சிதறிக் காட்டும்.

சாற்றிய கபந் தனக்குச் சல்லடைக் கண்போல் காணும்  
தேற்றிய திரிதோ டந்தான் சொல்முன்று குணமுங் காட்டும்  
வேற்றொரு துளியாய் நின்றால் வெகுதாம் சாத்தியந்தான்  
ஆற்றிமெள் ளப்ப டர்ந்தா வதுசுக சாத்ய மாமே

ரினி லமுந்திப் போனால் நிகழ்ந்திடு மசாத்தியந்தான்  
வாரிடு முளையாய் கேளாய் வளைய பாத்திரத்தி லேனும்  
பாரினில் குயவன் செய்மண் பாத்திரந் தனிலா னாலும்  
சாரவே பிடித்து வெய்யிற் றனில்வைத்துப் பார்ப்பாய்தானே."

- தேரையர் விருத்தம் - Sikicharathna Theepam

#### **SPREADING PATTERN OF OIL - INTERVENTION**

Lengthening	-	Vali
Splits	-	Azhal
Sieve	-	Iyyam
Stands as a drop	-	Poor prognosis
Slowly spreads	-	Good prognosis
Drop immerses into the urine	-	Incurable disease

#### **7.TOUCH ( தொடு உணர்வு)**

"வெம்மை குறைந்தாலு மிகுந்தாலும் வாதபித்தம்  
தம்மை நிரைநிரையாய்ச் சாற்றுவார்- வெம்மையன்றி  
சீதமும்அவ் வாறாகில் சிலேட்டும் மொன்றுதொந்த  
மீதமும்அவ் வாறாகு மேல்."

-அகத்தியர் வைத்திய சிந்தாமனி வெண்பா - 4000

“நேயமுடனே வாதத்தின் தேசந்தானும்  
நேர்மையாய்க் குளிர்ந்து சில விடத்திலே தான்  
மாயமுட னுட்டணமுந் துடிதுடிப்பு  
மருவுதலாம் பித்தத்தின் தேகந் தானும்

தோயவே வுட்ணமதா யிருக்குந் தெளிவாய்  
சேத்துமத்தின் தேகமது குளிர்ந்திருக்கும்  
பாய தொந்த தேகமது பலவாறாகும்  
பரிந்து தொட்டுத் தேகத்தைப் பார்த்துப் பேசே”

-கண்ணுசாமி பரம்பரை வைத்தியம்

In Vali disease, some regions of the body felt chill and in some areas they are hot. In Azhal disease, we can feel heat. In Iyya disease, chillness can be felt. In Thontham diseases, we can feel altered sensations.

## 8. NAADI (நாடி)

The ‘Pulse Diagnosis’ is a unique method in Siddha Medicine. The pulse should be examined in the Right hand for male and the left hand for female. The pulse can be recorded at the radial artery. By keenly observing the pulsation, the diagnosis of disease as well as its prognosis can be assessed clearly.

Naadi is nothing but the manifestation of the vital energy that sustains the life within our body. Naadi plays an most important role in Envagai thervu and it has been considered as foremost thing in assessing the prognosis and diagnosis of various diseases. Any variation that occurs in the three humors is reflected in the Naadi. These three humors organize, regularize and integrate basic functions of the human body. So, Naadi serves as a good indicator of all ailments.

### நாடி பார்க்கும் வகை

"இடுமென்ற நாடிகள்பார்க்கும் வகையைக் கேளு  
என்னவென்றால் நடுவிரல் நீவிப்பின்னே  
அடுமென்ற அடுத்தவிரல் மோதிரமாம் விரலை  
அப்பனே இளுத்தபின்பு சுண்டுவிரலிளுத்து  
உடுமென்ற தூண்டுவிர லிளுத்து அப்பால்  
உத்ததொரு அங்குட்ட விரலைநீ விக்கரத்தில்

படுமென்ற சீயோதி அங்குலமோ தள்ளி

பார்தடவி மூன்றுதரம் சுரம்பார்க்கும் வகையே

வகை என்ன வாதமது ஒண்ணைரையாம் பித்தம்

வளமையொன்று அய்யங்கால் வளமாய்நிற்கில்

பகையில்லை நாடிகளுந் தொந்த மில்லை

பண்பான் சுகரொசருருபக் கூறுசொன்னேன்"

-அகத்தியர் கனகமணி100

Naadi is felt by,

Vali - Tip of index finger

Azhal - Tip of middle finger

Iyyam - Tip of ring finger

மூவகையும் மாத்திரை அளவும்

"வழங்கிய வாதம் மாத்திரை ஒன்றாகில்

வழங்கிய பித்தம் தன்னில் அரைவாசி

அழங்கும் கபந்தான் அடங்கியே காலோடில்

பிழங்கிய சீவற்குப் பிசுகொன்று மில்லையே"

-நோய் நாடல் முதல் பாகம்

The pulse is measured in wheat/grain expansible heights. The normal unit of pulse diagnosis is 1 for Vali (Vatham), ½ for Azhal (Pitham) and ¼ for Iyyam (Kapham).

## THE PULSE PLAY

Compared to the gait of various animals, reptiles and birds,

“வாகிலன்னங் கோழி மயிலென நடக்கும் வாதம்

ஏகிய வாமையட்டை யிவையென நடக்கும் பித்தம்

போகிய தவளை பாம்பு போலவாம் சேத்துமந்தான்"

--நோய் நாடல் முதல் பாகம்



Vali - Movement of Swan and Peacock  
Azhal - Movement of Tortoise and Leech  
Iyyam - Movement of Frog and Serpent.

“பார்க்கையில் கைவிகாரம் பார்த்தா லாடவர்க்கு  
எற்கும் வலக்கை இடக்கை - மடவார்க் காகு”

-அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

Naadi is examined in right side for men and on the left side for women.

## 9. MANIKADAI NOOL (Wrist circumetric sign)

*Agathiya soodamanikayaru ..*

“கமலக்கை மணிக்கையில் கயறு சூத்திரம்  
விமலனே நோக்கியே வேடமாமுனி  
திமிலாம் பிணியது சேரச் செப்பியே  
அமலனாமுனிக்கு முன்னருளிச் செய்ததே”

-பதினெண் சித்தர் நாடிநூல்

According to the Pathinen Siddhar Naadinool, Manikadainool is also helpful in diagnosis. This manikkadai nool is a parameter to diagnose the disease by measuring the circumference of the wrist by means of a thread and then dividing the measured circumference with the patient's fingers. By this measurement the disease can be diagnosed.

When the Manikkadai nool is 11 fbs, the person will be stout and he will live a healthy life for many years. When the Manikkadai nool measures between 4 to 6, it indicates poor prognosis of disease and the severity of the illness will be high and it leads to death.

## MANIKKADAI- INFERENCE

### NOOL

10 fbs	-	Pricking pain in chest and limbs, gastritis and ulcer result.
9 ¾ fb	-	Fissure, dryness and cough will be resulted.
9 ½ fbs	-	Odema, increased body heat, burning sensation of eye, fever, Mega noi and anorexia.
9 ¼ fbs	-	Dysuria, insomnia ,sinusitis and burning sensation of eye.\
9 fbs	-	Impaired hearing, pain around waist, thigh pain, unable to walk.
8 ¾ fbs	-	Increased body heat, skin disease due to toxins, abdominal discomfort, cataract, sinusitis.
8 ½ fbs	-	Leucorrhoea, venereal disorder and Infertility will occur..
8 ¼ fbs	-	Stout and painful body. Headache. Sinusitis and toxins induced cough.
8 fbs	-	Abdominal discomfort, gastritis, anorexia and venereal diseases.
7 ¾ fbs	-	Piles, burning sensation of limbs, headache, numbness occur. Within 2 years cervical adenitis and epistaxis results.
7 ½ fbs	-	Osteoporosis, abdominal discomfort, burning sensation of eyes, increased body temperature. Within 6 days all the joints of the limbs presents a swelling.
7 ¼ fbs	-	Lumbar pain, increased pitha in head, anemia, eye pain, odema and somnolence
7 fbs	-	Pitham ascends to head, haemetemesis, phlegm, burning sensation of limbs and constipation.
6 ¾ fbs	-	Eye ache, dizziness, testis disorder. Within 3 years it causes anuria, pain and burning sensation over limbs, facial sweating results.
6 ½ fbs	-	Thirst, anorexia, increased body heat and vatham results.
6 ¼ fbs	-	Diarrhea, belching, vomiting and mucous dysentery
6 fbs	-	Reduced weight, phlegm in chest. It results in death within 20 days.
5 ¾ fbs	-	Delirium, dizziness, loss of conciousnes . It results in death even if the patient takes gruel diet

5 ½ fbs	-	Severity of illness is increased. Toxins spread to the head. Tooth darkens. Patient will die in 10 days.
5 ¼ fbs	-	Patient seems to be sleepy and death results on the next day.
5 fbs	-	Pallor and dryness of the body. Kabam engorges the throat and the person will die.
4 ¾ fbs	-	Dryness of tongue and tremor present. Patient will die in 7 days.
4 ½ fbs	-	Shrunken eyes, odema will present and death results in 9 days.
4 ¼ fbs	-	Tremor, weakness of limbs and darkening of face occurs. Finally death results in two days.
4 fbs	-	Pedal odema will be present. Patient will die in 5 days.

## 10. THE ASTROLOGY

### Macrocosm and Microcosm

Man is said to be Microcosm, and the Universe is Macrocosm; since what exist in the Universe exists in the human body too. Man is being an integral part of universal nature. The forces prevailing in the microcosm (Human body) are analogous with that of the forces prevailing in the macrocosm (Universe). The natural forces acting in and through various organs of the body are intimately related to or similar to or correspond to the forces acting in and through the organisms of the world.

This closely follows the Siddhar's doctrine,

"அண்டத்திலுள்ளதே பிண்டம்  
பிண்டத்திலுள்ளதே அண்டம்  
அண்டமும் பிண்டமு மொன்றே  
அறிந்து தான் பார்க்கும் போதே"

- சட்டமுனி

**Astral influences:**

All the influences which are radiated from the sun, planets and that of the stars can act upon the human bodies. Moon exercises a very bad impact on the disease in general especially during the period of new moon. For instance, paralysis, brain affections, dropsy, and stimulation of sexual perversions are resulted during the newmoon. Mars causes anemia and lack of nervous vigour. A conjugation of the moon with other planets such as Venus, mars, etc may make its influence still more injurious.

The 8<sup>th</sup> place forms the laghanam which deals about ones age, chronic diseases, death etc. In the organisms of man, these forces may act in an abnormal manner and cause disease. Similarly, in the great organism of the cosmos, they act abnormally likewise and bring about disease on earth and its atmospheric condition like earthquake, storms etc. The Mars invisibly influences human's blood constituents. The Venus instigates intersexual love.

The following are the instances in which every sign of the zodiac acts towards some particular parts of the body.

**1. According to T.V.S. Dictionary:**

- |                |   |
|----------------|---|
| 1. Aries       | - Neck  |
| 2. Taurus      | - Neck and shoulder                             |
| 3. Gemini      | - Arms and hands                                |
| 4. Cancer      | - Chest and adjacent parts.                     |
| 5. Leo         | - The heart and stomach                         |
| 6. Virgo       | - The intestines, base of stomach and umbilicus |
| 7. Libra       | - Kidney  |
| 8. Scorpio     | - Genitals                                      |
| 9. Sagittarius | - Lips  |
| 10. Capricorns | - Knees   |
| 11. Aquarius   | - Legs  |
| 12. Pisces     | - Feet  |

## **2. According to literature Thiruvalluvar periya sunthara sekaram.**

1. Mesham	-	Head
2. Rishabam	-	Face
3. Mithunam	-	Neck
4. Kadagam	-	Shoulders
5. Simmam	-	Chest
6. Kanni	-	Side of body
7. Thulaam	-	Back, stomach
8. Virutchigam	-	Testicles
9. Thanusu	-	Thigh
10. Magaram	-	Knees
11. Kumbam	-	Heel
12. Meenam	-	Foot

## **11. The Impact of the Planets on the Human Organs**

### **According to the literature Siddha Maruthuvanga Surukkam**

Each of these planets hold jurisdiction over some parts of the body similar to the signs of the Zodiac. The planets exercise special power over some parts of the body resulting in a disease or diseases in accordance with their impacts on the three basic humors in the system.

#### **1. Sani (Saturn)**

It exhibits supremacy over the bones, tooth, cartilages, ear, spleen, bladder and brain and gives rise to fever, leprosy, paralysis, dropsy, cancer, cough, asthma, deafness of the right ear, hernia etc.

#### **2. Guru (Jupiter)**

It holds jurisdiction over the blood, liver, pulmonary veins, diaphragm, Muscles of the trunk and sense of touch & smell.

### **3. Sevvaai (Mars)**

It has got power over the bile, gall bladder, left ear, pudendum, kidneys, fever, jaundice, convulsions, hemorrhage, carbuncle, erysipelas, ulcer etc.

### **4. Sukkiran (Venus)**

It exercises its impact on the blood and semen, throat, breast, abdomen, uterus, genitalia, taste, smell, pleasurable sensation, gonorrhea, barrenness, Abscesses or even death from sexual passions or from poison.

### **5. Pudhan (Mercury)**

It holds jurisdiction over the animal, spirit, also over legs, feet, hands, fingers, tongue, nerves and ligaments and produces fevers mania, phrenitis, epilepsy, convulsion, profuse expectoration or even death by poison, witchcraft and so on.

	<b>Planets</b>	<b>Organs of impact</b>
1.	Solar force	Heart
2.	Lunar force	Brain
3.	Mars	Gall Bladder
4.	Mercury	Kidney
5.	Venus	Lungs
6.	Jupiter	Liver
7.	Saturn	Spleen

### **5. According to literature Thiruvalluvar Periya Sunthara Sekaram.**

1.	Sooriyan	- Head
2.	Santhiran	- Face
3.	Sevvai	- Chest
4.	Puthan	- Center of Posterior Trunk
5.	Guru	- Stomach
6.	Sukkiran	- Groin, Genitalia
7.	Sani	- Thigh
8.	Raagu	- Hands
9.	Kedhu	- Legs

Each of these rasis and the organs of impact as well as the Girahams are found to be related with the resultant diseases of corresponding organs. Therefore, the human body is impregnated with the vital forces that could be acted upon by the astronomical bodies in the sky. With the augmented spiritual force, a sage is able to get control over the above said planets. All the others are under the influence of the forces exhibited by these asteroids.

## 4. READING BETWEEN THE LINES OF YUGI' S POEM

### AAN MALADU

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#### 4.1. According to Yugimuni Sikitcha Saaram

#### ஆண் மலடின் குணம்

“பார்க்கவே ஆண்மகனின் விந்து தானும்  
பதமான தித்திப்புயில் லாத தாலும்  
ஏற்கவே சலமீதில் மிதந்த தாலும்  
எழிலாக வயிர்ப்பற்று யிருப்ப தாலும்  
சேர்க்கவே மூத்திரத்தில் நுரைதான் போலும்  
செயலான கருவதுவும் தரிக்க மாட்டா  
தீர்க்கவே யூகிமுனி சிகிச்சா சாரம்  
தெளிவாக பாடி வைத்தார் திறமி தானே.”

மகளிர் மருத்துவம் பக்கம் எண் 115

#### MEANING:

Persons with

Semen of following character

- Lack of optimum sweetness
- Can float on water
- Absence of Vitality

and

Urine with Frothiness

would not be able to achieve fertilization.



#### 4.2. Light from the Lexicon.

According to T.V.Sambasivampillai Dictionary,

Terms	Meaning	Volume	Page no.
ஆண் மலடு	Want of fertility or fecundation in a man's semen	V	732
மலடு ரோகம்	A disease by which man or women are rendered incapable of producing child by reason of defective semen or mensus in them.	V	732
மலடன்	A man without issues (impotent man)	V	731
விந்து	Semen	V	1127
தித்திப்பு	Sweetness	IV part 2	1034
சலம்	Water	III	1939
உயிர்ப்பு	Vitality	I	1195
நுரை	Froth, Whiteness, Foamy, effervescence	IV part 2	1907
மூத்திரம்	Urine	V	888

### 4.3. ANALOGY OF YUGI'S LINES & QUOTINGS FROM MODERN TEXTS

“பார்க்கவே ஆண்மகனின் விந்து தானும்  
பதமான தித்திப்புயில் லாத தாலும்..”

- “...Normal amount of **fructose** is 13 m.mole or more per ejaculate. This is the minimum possible value needed for conception.”  
P.no 172, The Infertility Manual by Ediger, Kamini A.Rao.
- “...**Fructose** is produced in seminal vesicles and enters the urethra through the ejaculatory duct. Azoospermia with fructose absent in semen are due to obstructive azoospermia, primary testicular failure.”  
P.no 45 , Practical approach to infertility management- Kanthi Bansal
- “**Fructose** is the Fuel for semen.”  
-P. no 432 , Functional biochemistry in health and disease;  
by Eric Newsholme, Tony leech 1<sup>st</sup> edition

The sweetness mentioned in semen might have been referred to the presence of Fructose in the semen. In this line Sage Yugi signifies that the semen with lack of sweet taste is incapable to fertilize which can be closely related to the essentiality of fructose content in semen for normal conception as per modern text.

“....ஏற்கவே சலமீதில் மிதந்த தாலும்..”

- “ There was a negative correlation between the **mean specific gravity** and the percentage of unripe spermatozoa, the concentration of **unripe spermatozoa** was significantly higher in the '**floating**', than in the sedimenting, fraction, the specific gravity of the unripe sperm cells being less than that of the ripe ones. To some extent, the specific gravity of spermatozoa may be accounted for by the high concentration of deoxyribonucleoprotein in the sperm nucleus, but in a large measure it is also due to the state of 'dehydration' which is characteristic of the sperm protoplasm and its protein constituents..”

- P.no. 8, The Biochemistry of Semen by T. Mann

- “...studies confirmed human semen to have a **specific gravity** of between **1.020 and 1.040**”

-Matson et al, Journal of Reproductive biology

- “... an object with specific gravity less than 1 will float and those with a specific gravity greater than one will sink.”

-[www.ndt-ed.org/Physical\\_Chemical/SpecificGravity](http://www.ndt-ed.org/Physical_Chemical/SpecificGravity)

Substances with a specific gravity of 1 are neutrally buoyant in water, those with SG greater than one are denser than water, and so will sink in it, and those with an SG of less than one are less dense than water, and so will float. As stated above since normal semen has specific gravity 1.020 to 1.040, it will sink in water.

Sage Yugi emphasises that semen of infertile persons would float on water. this could happen if the specific gravity of semen is lowered below 1.0 due to semen abnormalities like azoospermia, oligoasthenospermia etc.

“....எழிலாக வுயிர்ப்பற்று யிருப்ப தாலும்..”

- “Regarding **vitality/viability**, if the semen sample shows all dead spermatazoa, the sample is considered as necrostermia.”

P.no 175, The Infertility Manual by Ediger,Kamini A.Rao

- **Vitality** (live spermatazoa,%) should be more than 58 55-63)% for a man to be fertile

- WHO Laboratory Manual for Human Semen.

In the above lines Sage Yugi signifies the essentiality of the vitality of sperms , which, in absence, can lead to infertility. This concept is practised even now as WHO indicated minimum of 58% of viability for a man to be fertile.

“...சேர்க்கவே முத்திரத்தில் நுரைதான் போலும்”

- “**Retrograde ejaculation** is characterized by “dry ejaculation” and/or cloudy urine on postcoital voiding”

Rev Urol. 2005; 7(Suppl 4)

- “Seminal plasma contains the **seminal proteins** and other biochemical substances”.

P.no 170 The Infertility Manual by Ediger, Kamini A.Rao

- “**Retrograde ejaculation** is a rare cause of **male infertility**. It should be suspected in patient with oligospermia or aspermia. Any condition that interferes with the symphathetic innervations of the bladder neck or vas deferens may result in retrograde flow. The condition is diagnosed by examining **postejaculate urine** for spermatozoa”

-Clinical Reproductive medicine and surgery ; By Tommaso Falcone

- “Prevalence of **retrograde** ejaculation in patients with hypospermia is **40.5%.**”

- Juárez-Bengoa A et al , Ginecol Obstet Mex. 2011

- “The presence of semen in the urine released from the body, can result in foamy urine. Usually after intercourse, small amounts of semen gets left behind in the urethra. However, this amount is insignificant and cannot lead to foamy urine. On the other hand, it happens in the case of retrograde ejaculation (bladder sphincter not functioning properly), wherein the semen is forced into the urinary bladder. This may result in **foamy urine.**”

<http://www.buzzle.com/articles/foamy-urine-causes.html>

In this line, Sage Yugimuni explains the quality of urine for an infertile patient.

He is mentioning the frothiness in urine as a sign for male infertility. This can be closely comparable to frothiness of urine due to semen, in retrograde ejaculation which is one of cause for male infertility.

“...செயலான கருவதுவும் தரிக்க மாட்டா..”	
According to Sage Yugimuni	According to Modern text mentioned in the parallel analysis.
<p>Male having Semen with</p> <ol style="list-style-type: none"> <li>1.Absence of sweetness</li> <li>2.Absence of vitality</li> <li>3.Buoyancy on water</li> </ol> <p>And Urine with frothiness</p> <p><b>could not be able to achieve fertilization.</b></p>	<p>Male having Semen with</p> <ol style="list-style-type: none"> <li>1.Absence of Fructose</li> <li>2.Absence of vitality/viability of sperms</li> <li>3.less specific gravity than water due to very low sperm count</li> </ol> <p>And Urine with frothiness due to Retrograde ejaculation</p> <p><b>could not be able to achieve fertilization.</b></p>

From this parallel analysis, it is found obvious that, Yugi’s insight about Diagnostic characteristics of Aan maladu are found to be highly relevant to the scientific concepts about Male infertility mentioned in the Reproductive medicine.

## 5. REVIEW OF SIDDHA LITERATURE: AAN MALADU

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Sage Thiruvallur signifies the gift of having a child for a couple in the lines:

“குழலினி தியாழினி தென்ப தம்மக்கள்  
மழலை சொல் கேளாதவர்.”

“பெருமவற்றுள் யாமறிவதில்லை யறிவறிந்த  
மக்கட்பே றல்ல பிற.”

### 5.1. Maladu:

According to T.V.Sambasivam pillai dictionary, A disease by which men or women are rendered incapable of producing child by reason of defective semen or mensus in them is termed as *Maladu* in Siddha. (P.no 731 Vol V). *Maladurogam* can be classified into two types:

1.Aan maladu

2.Pen maladu (P.no 732 Vol V)

The term “**Maladan**” means a Male with no issues (P.no 731 Vol V)

**5.2. Aan maladu:** Agathiar suggest that *Maladu* is only for male and not for female.

பதினெண் சித்தர்கள் பாடிய வைத்திய சில்லறை கோவை(முதல் பாகம்)

பாரப்பா பெண்மலடாங் கர்ப்பங் கோளின்  
பக்குவத்தைச் சொல்லுகிறேன் பண்பாய்க்கேளு  
ஆரப்பா ஆண்மலடே யாகுமல் லாமல்  
அப்பனே பெண்மலடு யாருமில்லை  
நேரப்பாதவமிருதும் பொருளையீந்தும்  
நேராக வில்லையது குலையாலே

-அகத்தியர் கர்ப்பக்கோள்

Yugimuni explains about Aan maladu in his treatise Yugimuni Sikitcha Saaram.

### ஆண் மலடின் குணம்

பார்க்கவே ஆண்மகனின் விந்து தானும்

பதமான தித்திப்புயில் லாத தாலும்

ஏற்கவே சலமீதில் மிதந்த தாலும்

எழிலாக வுயிர்ப்பற்று யிருப்ப தாலும்

சேர்க்கவே மூத்திரத்தில் நுரைதான் போலும்

செயலான கருவதுவும் தரிக்க மாட்டா

தீர்க்கவே யூகிமுனி சிகிச்சா சாரம்

தெளிவாக பாடி வைத்தார் திறமி தானே.

மகளிர் மருத்துவம் பக்கம் எண் 115

According to Yugimuni, A person with semen of following qualities

- Lack of sweetness
- Buoyancy on water
- Absence of virility/ viability

and Frothy micturition will be incapable to impregnate women.

Different Siddhars revealed their approach to a infertile patient in different aspects. **Dhanwanthri** explains a disease associated more with defective semen: **Sukkilapitham**

### சுக்கில பித்தம்

தக்கதாங் கர்ப்பந் தன்னைத் தவிர்த்திடுங் கனவு தன்னில்

சக்கிடுஞ் சுக்கிலத்தை சுக்கில நாளங் காந்தும்

மிக்கசுகிலம் போல்நீரில் வெள்ளையங் காணுங்கண்டாற்

சுக்கிலபித்தமென்றே சொல்லினர் சுருதிவல்லோர்

தன்வந்திரி வைத்தியம் (ப.எண்68)



## பொருள்

கர்ப்பம் தரிக்க இயலாது தூக்கத்தில் சுக்கிலம் வெளியாகும். சுக்கில நாளத்தில் எரிச்சிலெடுக்கும் சுக்கிலத்தை நீரில் விட்டால் அது வெண்மையாக மிதக்கும். இவை **சுக்கில பித்த** லட்சணங்களாகும்.

Sukkilapitham is characterised by

- The Semen is incapable to impregnate women
- Nocturnal emission
- Burning sensation in ejaculatory ducts
- When a drop of semen is poured on water it will float with white colour.

*The views of Yugimuni and Dhanwanthri synchronise in one thing that a semen which floats on a water surface will be incapable for fertility.*

### According to Theraiyar yamagam

Theraiyar explains the different qualities of semen. He compared the physical nature of semen with known things and proposed the ratings for the quality of semen.

Nature of semen	Inference
White and akin to the butter	excellent
White and akin to curd	Very good
White and akin to milk	Good
White and akin to buttermilk	Fair
Akin to honey in colour and consistency	Average
Akin to ghee in colour and weight	Poor
Akin to Toddy in colour and thickness	Very poor
Akin to water	Very bad

Siddhars' thought about the basic units of reproduction- semen and ovum, crossed the limits of procreation and waved towards attaining their spiritual target. In Siddha, *Sukkilam* is considered as *Sivam* and *naadham* is considered as *Sakthi*. By which *karu* is considered as *Sathasivam*.

### 5.3. Semen formation:

*According to Thirumoolar Thirumanthiram*, At the time of sirushti, kundali appears in semem. Semen functions as God's kiriyashakthi during formation of embryo.

#### விந்துவின் தோற்றம்

உதயத்தில் விந்துவில் ஓங்கு குண்டலியும்  
உதய குடிலில் வயிந்தவம் ஒன்பான்  
விதியில் பிரமாதி கல்மிகு சத்தி  
கதியிள் கரமங் கலைவை கரியே

-திருமூலர்

சிருஷ்டி காலத்தில் விந்துவில் குண்டலி தோன்றி விளங்குகிறது. தோன்ருவதற்கு இடமாகிய பரம ஆகாயத்தில் வயிந்தவம் ஒன்பதும், பிரமன் முதலான ஒன்பது பேதங்களும் அவற்றின் சக்திகளும் இத்ததுவங்களின் நடையால் அந்தகரணங்கள், பஞ்சகலைகள், வைரியாதி வாக்குகள் இவை அனைதும் விரியும். சிருஷ்டி காலத்தில் விந்து என்பது பரசிவத்தின் கிரியாசக்தியின் காரியப்பாட்டால் வெளிப்படுகிறது.

"அழிகின்ற விந்து அளவை அறியார்  
கழிகின்ற தன்னையுட் காக்கலுந் தேரார்  
அழிகின்ற காயட் தழிந்தயர் வற்றோர்  
அழிகின்ற தன்மை யறிந்தொழி யாரே"

-திருமூலர்

அழிகின்ற வெண்ணீராகிய விந்துவின் அளவை கூறுங்கால் 80 துளி குருதி ஒரு வெண்ணீரின் துளியாகும்.இத்தகைய 80 வெண்ணீரின் துளியே ஒரு முழுத்துளி விந்துவாகும். எனவே ஒரு துளி விந்து அழியின் 6400 துளி குருதி அழிந்ததாகும்.1000 சொட்டு குருதி, 3000 சொட்டு ரத்தமும் சுக்கிலமும் சுண்டி கலந்ததே ஒரு விந்தாம்.

#### **ஆகாரத்தின் சாரமானது ஏழுடற்கட்டுகளிலுமுள்ள**

அந்தந்த வெப்பத்தினாலும் மறுபடியும் பக்குவம் செய்யப்பட்டு சப்ததாதுக்களின் பரிணாமத்தை அடைகின்றது.எவ்வாறெனில்

- இரசத்திலிருந்து இரத்தமும்
- இரத்தத்திலிருந்து மாமிசமும்
- மாமிசத்திலிருந்து கொழுப்பும்
- கொழுப்பிலிருந்து எலும்பும்
- எலும்பிலிருந்து மூளையும்
- மூளையிலிருந்து சுக்கிலமும்
- இறுதியில் சுக்கிலத்திலிருந்து கருப்பமும் உற்பத்தியாகின்றது.

( Siddha maruthuvanga surukkam p.no397)

#### **ACCORDING TO THERAIYAR**

- Food nourishes Saaram or essence on the first day
- It then nourishes Blood on the second day
- It then nourishes Muscles on the third day
- It then nourishes Adipose tissue on the fourth day
- It then nourishes Bone on the fifth day
- It then nourishes Bone marrow on the sixth day
- It then nourishes Semen on the seventh day

## Concepts about formation of embryo by semen.

*According to agathiyar,*

**விந்துவை பற்றிய விளக்கம்**

"விந்துநிலை யறிந்து பாயுங்காலம்

வேதாந்த னாதமதுக்கு இருண்டாகி

சொந்தமுடநே இரண்டுமே நியுமாகி

சோதிமணி யானதுவிம்பி றையுமாகி

வட்னமதிப் பிறையதுவும் வட்டமாகி

வட்டமதி ரண்டுருவாய் மண்ணுமாகி

அந்தமுள்ள மண்ணுதறி உப்பாய் நின்றே

யாதியென்ற பொருளான பிண்டமாச்சே"

**-அகத்தியர்**

விந்து பாயுங்காலம் நாதத்திற்கு உயிருண்டாகி அவ்விரண்டும் சேர்ந்து மணியுமாகி ,அந்த சோதிமணி முதலில் பிறை போல் ஆகி பின்பு வட்டமாகி அது திரண்டு மண்ணுமாகி நிற்கும்.மண்ணை உதறி உப்பாய் நின்று அந்த ஆதியான பொருள் பிண்டமாச்சு.

After the penetration of the sperm into the ovum, the sperm head fuse With the oocyte to form a single cell. Then it undergoes several stages of cell Division and finally form the embryo

*Sage Sivavaakiyar and Sage Thirumoolar explains the role of semen after entering uterus*

**சுக்கில குணம்**

"உன்மையான சுக்கில முபாயமா மிருந்ததும்

வெண்மையாகி நீரிலே விரைந்துனீர தானதும்

தண்மையான காயமே தரித்துருவமானதும்

தெண்மையான ஞானிக தெளிந்துரைக்க வேணுமே"

**-சிவவாக்கியர்**

விந்துவானது கர்ப்பத்தில் வெகுதந்திரமாய் செல்லுகிறது என்பர். அங்ஙனம் புகும்போது எல்லாம் நீராக இடையிலிருக்கும் நீரில் கலந்து ஒரு பனித் துளியளவே நிலைத்திருக்கும் என்பர். அந்த சிறிய அளவே பெரிய ரூபமாய் பரிணமிக்கின்றது என்பர்.இவ்வரிய விடயம் ஞானிகளுக்கே புலப்படுவதாகும்.

At the time of copulation, the semen is ejaculated. The prostatic fluid gives the semen a milky appearance. In the early minutes after ejaculation, the sperm remains immotile, possibly because of the coagulum. As the coagulum dissolves the sperm becomes highly motile.

"உன்னிய கர்ப்பக் குழியாம் வெளியிலே  
பன்னிய நாதம் பகர்ந்த பிருத்திவி  
வன்னியும் வாயுவும் மாயுருஞ் சுக்கிலம்  
மன்னைய சமனாய் வளர்க்கு முதகமே."

"விழுந்தது இலிங்கம் விரிந்தது யோனி  
ஒழிந்த முதல் ஐந்தும் ஈரைந்தோடு ஏறிப்  
பொழிந்த புனல்பூதம் போற்றும் கரணம்  
ஒழிந்த நுதல் உச்சி உள்ளே ஒளித்ததே"

-திருமூலர்

The ovum consists of element earth whereas the sperm consists of elements fire and air. The uterine wall which nourishes it has water and the uterine cavity is of the elemental space. Therefore in the formation of foetus all the five elements combine and create it.

வேர்க்கவே வேலிபோல் வளைந்து காக்கும்  
விந்துவுடன் பிராணவாயு விளக்களாமே

-யுகிமுனி

Abanan stays outside and the pranay goes along with spermatozoa and bisects the size of the zygote. Uddhanan helps in the growth of an embryo.

## Sex variation in foetus

"ஆண்மிகில் ஆணாகும் பெண்மிகில் பெண்ணாகும்  
பூணிரண்டொத்துப் பொருந்தில் அலிஆகும்  
தான்மிகும் ஆகில் தரணி முழுதானும்  
பாணவ மிக்கிடில் பாய்ந்ததும் இல்லையே"  
-திருமூலர்

At the time of copulation if the male dominates then the foetus will be male and if the female dominates then it would be female foetus. If the both are in equal domination , the child would be eunuch.

### 5.4. Disease associated more with defective semen

#### 1.Sukkilavatham

##### சுக்கில வாதம்

"வாதமா முடலுருகி மிகவும் வற்றி  
மலமுத்திரஞ் சிக்கியே கீழ்விழாமல்  
நாதமாம் நாகோடு மூக்குதன்னில்  
நனுக்கமா யுதிரந்தானருவி பாயுஞ்  
சேதனமாய்ச் சேட்டுமழும் கோழையுண்டாகி  
செயலோடு சுவாசமா யருசி யுண்டாஞ்  
சூதமாய் சுக்கிலந்தான் றுன்னி யாகுந்  
துரியசுக் கிலவாத சூட்சந்தானே"

##### யூகிமுனி

*Symptoms of Sukkilavatham:* Emaciation, constipation, oliguria, bleeding from the nose, phlegm Accumulation due to increased Kabam, breathlessness, loss of taste, Abnormal semen.

## 2.Sukkilapitham

### சுக்கில பித்தம்

தக்கதாங் கர்ப்பந் தன்னைத் தவிர்த்திடுங் கனவு தன்னில்  
சக்கிடுஞ் சுக்கிலத்தை சுக்கில நாளங் காந்தும்  
மிக்கசுகிலம் போல்நீரில் வெள்ளையங் காணுங்கண்டாற்  
சுக்கிலபித்தமென்றே சொல்லினர் சுருதிவல்லோர்

Sukkilapitham is characterised by

- The Semen is incapable to impregnate women
- Nocturnal emission
- Burning sensation in ejaculatory ducts
- When a drop of semen is poured on water it will float with white colour.

### 3. Vali azhal suram (Noi Naadal Noimudhal Naadal part 2- p.no 17)

Characterised by fever, rigor, sneezing, restlessness, *thathunattam*, nausea etc.

### 4.Karumpanasai ammai(Noi Naadal Noimudhal Naadal part 2- p.no 59)

According to “Agathiyar vaisoori nool” Karumpanasai ammai will affect the semen and can make the patient *maladu*.

### 5.Iya paandu(Noi Naadal Noimudhal Naadal part 2- p.no 298)

*Inthiriya nashtam* is one of the symptoms of iya paandu along with vomiting, sneezing, expectoration , hip pain etc.

### 6.Perumanjal kaamalai(Noi Naadal Noimudhal Naadal part 2- p.no 17)

This disease is characterised by *Thathunattam*, yellowish discolouration of face, eye, tongue, skin, loss of appetite, dyspnoea etc.

These diseases mentioned above, if not properly treated may lead on to Aan maladu.

## 6. SIDDHA PATHOLOGY OF AAN MALADU

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The basic constitution of the body is made up of 96 Thathuvams. Due to diet and other activities 96 Thathuvams get deranged and result in diseases, either pertaining to body or mind.

### 1. Deranged 96 Thathuvams are as follows:

#### 1. Iymboothangal (Five elements)

- Water - Semen abnormalities(production)(semen=water+space)
- Fire - Semen abnormalities(functional)
- Air - Semen abnormalities(functional)
- Space - Semen abnormalities(production)(semen=water+space)

#### 2. a. Iymporigal (Penta sensors)

Mei- Decreased sexual indulgence

#### 2. b. Iyampulangal (Functions of Penta sensors)

Thoduthal (Touch) - Decreased sexual indulgence.

#### 3. Kanmenthiriyam/ Kanmavidayam (Motor organs)

Karuvaai - Erectile dysfunction, Premature ejaculation.

#### 4. Anthakaranam (Components of mind)

Manam - Fear present (Mood disturbances)

#### 5. Naadi (Differential Pulse Perception)

Sangini - Erectile dysfunction, Premature ejaculation.



## 6. Aadharam (Stations of soul)

1. Moolaathaaram - Gonadal abnormalities

2. Swathitanam –

"விந்து குடியிருந்த திருனாட்டை விடமாட்டேன்  
மாறுகின்ற கத்திரிக்கோல் பட்டந்தனில்  
விந்துனின்று விளங்குநதி மைய்யத்துள்ளே  
விளங்கு சுவாதிட்டான வெளியிலேதான்"

-திருவள்ளுவர் ஞானவெட்டியான்.

The Swathittanam is said to be found between genital and navel region.

3. Manipooragam - Semen abnormalities (production) (semen=water+space)

Water element is attributed to Manipooragam region.

4. Anaakatham - Semen abnormalities (functional)

Fire element is attributed to Anaakatham region.

5. Visuthi - Semen abnormalities (functional)

Air element is attributed to this region.

6. Aakinai - Semen abnormalities(production)(semen=water+space)

Hypogonadotropic Hypogonadism

## 7. Gunam (character)

- Thamo gunam- sexual abnormalities..

## 8. Avatahi (States of consciousness)

- Vizhippunilai- Reduced sexual indulgence
- Suzhuthi – Part of Ananthamayakosam and Sukkilavasayam.

## 9. Vinai (Act)

Thee vinai- Alcoholism,Smoking.

## 10. Padhinaangu Vegangal (Natural Urges/Reflexes)

Sukkilam - Seminuria, Nocturnal emission

## 11. Aasayam

Sukkilavasayam - semen abnormalities,failure to procreate

## 12. Kosam (Body systems)

- Manomaya kosam - Fear, anxiety (Mood disturbances)
- Aanandamaya kosam - Semen abnormalities, Failure to procreate

## 13. Deranged Uyir Thathukkal (Humoral or Tridosha Pathology)

Panchaboothams are manifested in the body as three vital forces,

- 1.Vatham
2. Pitham
3. Kabham

### a. Vatham or Vaayu:

The word vaayu not only implies wind but also comprehends all the phenomenon which comes under the function of the central and sympathetic nervous system. Structurally it is the combination of Vaayu and Aagaya boothams.

It carries out actions like

- Maintenance of 14 natural urges including *ejaculation*.
- Maintenance of seven body components, functions including *semen*
- It's location includes *Abanan, kaamakodi, Nerve & Muscle*.
- Vatham on derangement causes weakness to body parts. In male infertility the weakness of a genital (erectile dysfunction and ejaculatory defects) is due to vatha derangement.
- Deranged vayu in sukkilam results two complications:

1. If Azhal added up with Vayu, semen will become watery and tit is prematurely ejaculated.  
i.e. Vayu+Azhal may result Premature ejaculation and Reduced consistency of semen.
  2. If Iyam added up with Vayu , semen will become thicker and cant be ejaculated or it will reduce the potency of reproductive organs  
i.e. Vayu +Iyam may result erectile dysfunction
- Abaanan,one of the vatham is responsible for controlling ejaculation function.

“தெளிந்திட்ட வாதம பானத்தை பற்றி

மணமான விந்துவிழ மலனீர்பெய்ய வழிகாதுறு..”

சித்த மருத்துவாங்க சுருக்கம் 213

Hence Derangement of vatham can result in male infertility either through semen abnormalities or through ejaculatory defects.

- As per sathaga naadi and agathiyar, Male infertility related pulse appraisal were
- Vatha naadi
  - Vatha pitha naadi
  - Pithavatha naadi
  - Pithathil vayu naadi

From the above It should be noted that Vatham humour derangement seem to be more sensitive humour for a infertile man.

In Aan maladu, primarily affected Vayukkal are, Piraanan, Abanan, Vyanan,Samanan, Devadhathan.

S.no	Types of vaatham	Derangements
1.	Piraanan	Abnormal semen
2.	Abanan	Ejaculatory defect
3.	Viyaanan	Erectile dysfunction
4.	Samanan	Abanan gets affected.
6.	Dhevadhathan	Genital abnormalities

### 13. b.Pitham

It is the life energy manifestation of Thee Bootham in the body. It is the metabolic thermal life force of the body. It carries out digestion, absorption, metabolism, and colouration of the blood etc. Pitham is located in the bladder, Moolaakini, Heart, Umbilical region, Abdomen, Stomach, Sweat, Saliva, Blood, Eyes and Skin. As Moolaatharam is in the Akkini mandalam, any pathological condition here can harm the Moolakini and eventually derange the Pitha humor. Symptoms are produced when deranged Pithams affect the seven Thathus and Malam.

Derangement due to addition of heat with pitha characters, will result in disorder in pitham residing places and other homoural places.e.g Varicocele

In Aan maladu, primarily affected Pitham component is

- Anar Pitham
- Saathaga Pitham

S.no	Types of pitham	Derangements
1.	Anar Pitham	Semen abnormalities
2.	Saathagam	Loss of energy

### 13.c. Kabam

Kabam is constituted by Appu and Pirithivi boothams. It is responsible for Co-ordination and defense mechanism of the body. Kabam is located in Samaanavayu, *Semen*, Suzhumunai, Blood, Bone marrow, Nose, Chest,Nerve, Bone, Brain, Eyes, and Joints.

Derangement due to addition of Neippu+kulirchi with kaba characters, will result in disorder in kabam residing places like semen

Derangement due to addition of pitham deranging things with kaba characters, will result in disorder in kabam residing places like semen and other humour residing place like abanan, spermatic cord.

When thathuvams, including Vatham, Pitham, and Kabam are deranged, they affect seven Udal thathukkal Viz, Saaram, Senneer, Oon, Kozhuppu, Enbu, Moolai, Sukkilam or Suronitham and Udalthees.

#### 14. Manikadai Nool

8 ½ finger breadth - Thathunattam

#### 15.Thinai

Mullai- vatha related disorders

#### 16.Yakkai;

**Vatha udal-** Erectile dysfunction

Decreased sexual indulgence

வாத உடம்பு பண்புகள்

"அணங்கியர் தம்பால் அணங்குவிந்தியை

அஃகலும் தனுசு அதிகரித்திடலும்"

வீரியவளர்ச்சிக் குறைவு,ஆண்மை நிலையின்மை....

-சித்த மருத்துவங்க சுருக்கம்170

**Pitha udal-** Oligospermia

பித்த உடல் பண்புகள்

"அருந்தியும் பெண்ணுழியவரமீக் கின்மையும்

அஃதுபோல் விந்துவும் காமமண்ணுதலும்"

அற்ப சுக்கிலமும்,அர்ப காமமும், பெண்களிடத்தில் அற்பவிருப்பும்

-சித்த மருத்துவங்க சுருக்கம். 173

**Iyam udal-** Reduced capacity to procreate

ஐயம் உடம்பு பண்புகள்

"பெலஞ்சேர்ந் திருக்கும் தனுவுடையான் பெருமை உடையான்

வெகுசெல்வன்

குலஞ்சேர்ந்திருக்கு மிந்திரிய கொடுமை பெருக்கங் குறைவுள்ளான்..."

ஐயம் உடம்பின் இயற்கை பண்புடையவன் –வன்மையான உடல்,இந்திரிய குறைவு, பிள்ளைபேற்றுக்குறைவு...

- சித்த மருத்துவங்க சுருக்கம்181

### 17.Seven body components

- Senneer- Miku gunam(varicocele)
- Oon- Kurai kunam(weakness)
- Sukkilam- Azoospermia/Oligospermia/Asthenospermia/Teratospermia/  
Oligoasthenoteratospermia

### 18.Taste

- Increased Pulippu- Weakness of genital organs
- Increased Kaippu intake- Abnormal changes in the semen quality.
- Increased Kaarpu- Oligospermia
- Sweetness is responsible for maintaining 7 body tissue components normalcy.

### Pathology of aan maladu:

Predominant pathological features are listed in the following table:

Bootham	Aadhaaram	Taste	Humour	Bodytype	Naadi	Body component
Water/ Fire/ Air/ Space.	Mooladharsm Swathitanam Manipooragam Anagatham Swathi Aagnai	Pulippu/  Kaippu/  Kaarpu.	Vatha/ Pitha.  Vayu+azhal/ Vayu+iyam	kaba udal/ Pitha udal/ vatha udal	Vatham Vathapitham Pithavatham Pithathil vayu	Sukkilam/  Oon/  senneer
Vinai	Aasayam	Kosam	Dasavayukkal	Dasanaadi	14 Urges	Manikadai
Theeya vinai	Sukkilavasayam	Manomayakosam/ Ananthamayakosam	Abanan/ Pranan/ Thevathathan.	Sangini	sukkilam	8 and half

## 7. MODERN ASPECTS ABOUT MALE INFERTILITY

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### 7.1 Anatomy of Male Reproductive system

#### Testis

The testis is a firm, mobile organ lying within the scrotum. The left testis usually lies at a lower level than the right. Each testis is surrounded by a tough fibrous capsule, the tunica albuginea. Extending from the inner surface of the capsule is a series of fibrous septa that divide the interior of the organ into lobules. Lying within each lobule are one to three coiled seminiferous tubules. The tubules open into a network of channels called the rete testis. Small efferent ductules connect the rete testis to the upper end of the epididymis.

*Normal spermatogenesis* can occur only if the testes are at a temperature lower than that of the abdominal cavity. When they are located in the scrotum, they are at a temperature about 3°C lower than the abdominal temperature. The control of testicular temperature in the scrotum is not fully understood, but the surface area of the scrotal skin can be changed reflexly by the contraction of the dartos and cremaster muscles. It is now recognized that the testicular veins in the spermatic cord that form the pampiniform plexus together with the branches of the testicular arteries, which lie close to the veins probably assist in stabilizing the temperature of the testes by a countercurrent heat exchange mechanism. By this means, the hot blood arriving in the artery from the abdomen loses heat to the blood ascending to the abdomen within the veins.

#### Epididymis

The epididymis is a firm structure lying posterior to the testis, with the vas deferens lying on its medial side. It has an expanded upper end, the head, a body, and a pointed tail inferiorly. Laterally, a distinct groove lies between the testis and the epididymis, which is lined with the inner visceral layer of the tunica vaginalis and is called the sinus of the epididymis.

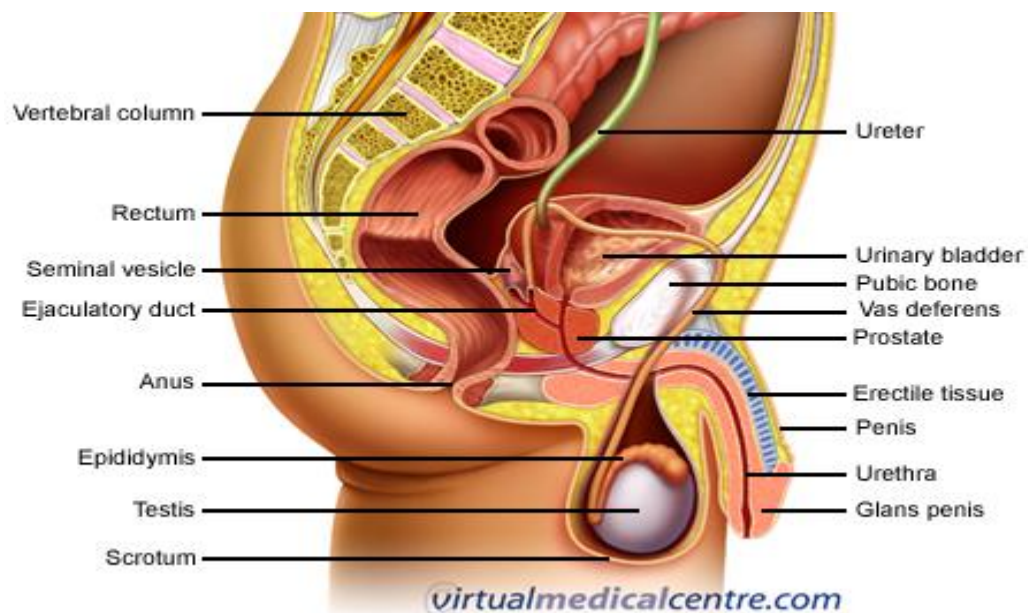
The epididymis is a much coiled tube nearly 20 ft (6 m) long, embedded in connective tissue. The tube emerges from the tail of the epididymis as the vas deferens, which enters the spermatic cord. The long length of the duct of the epididymis provides storage space for the spermatozoa and allows them to mature. A

main *function* of the epididymis is the absorption of fluid. Another function may be the addition of substances to the seminal fluid to nourish the maturing sperm.

### **Vas Deferens**

The vas deferens is a thick-walled tube about 45 cm long that conveys mature sperm from the epididymis to the ejaculatory duct and the urethra. It arises from the lower end or tail of the epididymis and passes through the inguinal canal. It emerges from the deep inguinal ring and passes around the lateral margin of the inferior epigastric artery. It then passes downward and backward on the lateral wall of the pelvis and crosses the ureter in the region of the ischial spine. The vas deferens then runs medially and downward on the posterior surface of the bladder . The terminal part of the vas deferens is dilated to form the ampulla of the vas deferens. The inferior end of the ampulla narrows down and joins the duct of the seminal vesicle to form the ejaculatory duct.

## **ANATOMY OF MALE UROGENITAL TRACT**



### **Seminal Vesicles**

The seminal vesicles are two lobulated organs about 5 cm long lying on the posterior surface of the bladder . On the medial side of each vesicle lies the terminal part of the vas deferens. Posteriorly, the seminal vesicles are related to the rectum.



Inferiorly, each seminal vesicle narrows and joins the vas deferens of the same side to form the ejaculatory duct. Each seminal vesicle consists of a much-coiled tube embedded in connective tissue.

The *function* of the seminal vesicles is to produce a secretion that is added to the seminal fluid. The secretions nourish the spermatozoa. During ejaculation the seminal vesicles contract and expel their contents into the ejaculatory ducts, thus washing the spermatozoa out of the urethra.

### **Ejaculatory Ducts**

The two ejaculatory ducts are each less than 2.5 cm long and are formed by the union of the vas deferens and the duct of the seminal vesicle . The ejaculatory ducts pierce the posterior surface of the prostate and open into the prostatic part of the urethra, close to the margins of the prostatic utricle; their *function* is to drain the seminal fluid into the prostatic urethra.

### **Prostate**

The prostate is a fibromuscular glandular organ that surrounds the prostatic urethra . It is about 3 cm long and lies between the neck of the bladder above and the urogenital diaphragm below .The prostate is surrounded by a fibrous capsule . The somewhat conical prostate has a base, which lies against the bladder neck above, and an apex, which lies against the urogenital diaphragm below. The two ejaculatory ducts pierce the upper part of the posterior surface of the prostate to open into the prostatic urethra at the lateral margins of the prostatic utricle

#### *Function of the Prostate*

The prostate produces a thin, milky fluid containing citric acid and acid phosphatase that is added to the seminal fluid at the time of ejaculation. The smooth muscle, which surrounds the glands, squeezes the secretion into the prostatic urethra. The prostatic secretion is alkaline and helps neutralize the acidity in the vagina.

### **Penis**

#### *Location and Description*

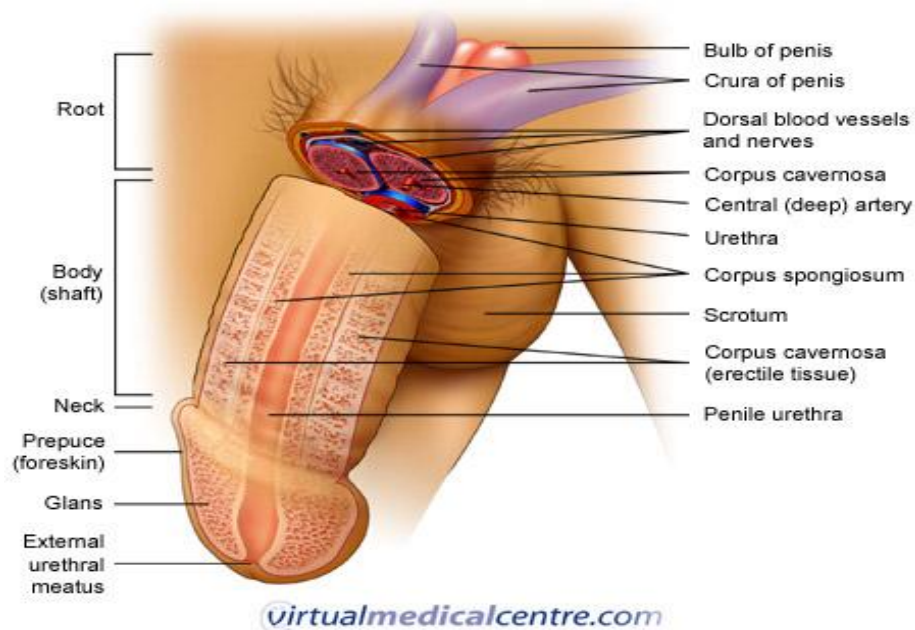
The penis has a fixed root and a body that hangs free .

#### *Root of the Penis*

The root of the penis is made up of three masses of erectile tissue called the bulb of the penis and the right and left crura of the penis. The bulb is situated in the midline and is attached to the undersurface of the urogenital diaphragm. It is

traversed by the urethra and is covered on its outer surface by the bulbospongiosus muscles. Each crus is attached to the side of the pubic arch and is covered on its outer surface by the ischiocavernosus muscle. The bulb is continued forward into the body of the penis and forms the corpus spongiosum. The two crura converge anteriorly and come to lie side by side in the dorsal part of the body of the penis, forming the corpora cavernosa .

## ANATOMY OF PENIS



### Body of the Penis

The body of the penis is essentially composed of three cylinders of erectile tissue enclosed in a tubular sheath of fascia (Buck's fascia). The erectile tissue is made up of two dorsally placed corpora cavernosa and a single corpus spongiosum applied to their ventral surface. At its distal extremity, the corpus spongiosum expands to form the glans penis, which covers the distal ends of the corpora cavernosa. On the tip of the glans penis is the slitlike orifice of the urethra, called the external urethral meatus.

The prepuce or foreskin is a hoodlike fold of skin that covers the glans. It is connected to the glans just below the urethral orifice by a fold called the frenulum.

The body of the penis is supported by two condensations of deep fascia that extend downward from the linea alba and symphysis pubis to be attached to the fascia of the penis.

### *Blood Supply*

#### *Arteries*

The corpora cavernosa are supplied by the deep arteries of the penis. The corpus spongiosum is supplied by the artery of the bulb. In addition, there is the dorsal artery of the penis. All the above arteries are branches of the internal pudendal artery.

#### *Veins*

The veins drain into the internal Pudendal veins.

#### *Lymph Drainage*

The skin of the penis is drained into the medial group of superficial inguinal nodes. The deep structures of the penis are drained into the internal iliac nodes.

#### *Nerve Supply*

The nerve supply is from the Pudendal nerve and the pelvic plexuses.

## **Scrotum**

### **Location and Description**

The scrotum is an outpouching of the lower part of the anterior abdominal wall and contains the testes, the epididymides, and the lower ends of the spermatic cords.

The wall of the scrotum has the following layers:

- Skin
- Superficial fascia; the dartos muscle, which is smooth muscle, replaces the fatty layer of the anterior abdominal wall, and Scarpa's fascia (membranous layer) is now called Colles' fascia.
- External spermatic fascia derived from the external oblique
- Cremasteric fascia derived from the internal oblique
- Internal spermatic fascia derived from the fascia transversalis
- Tunica vaginalis, which is a closed sac that covers the anterior, medial, and lateral surfaces of each testis

### *Blood Supply*

Subcutaneous plexuses and arteriovenous anastomoses promote heat loss and thus assist in the environmental control of the temperature of the testes.

### *Arteries*

The external pudendal branches of the femoral and scrotal branches of the internal pudendal arteries supply the scrotum.

### *Veins*

The veins accompany the corresponding arteries.

### *Lymph Drainage*

The wall of the scrotum is drained into the medial group of superficial inguinal lymph nodes. The lymph drainage of the testis and epididymis ascends in the spermatic cord and ends in the lumbar (Para-aortic) lymph nodes at the level of the first lumbar vertebra.

### *Nerve Supply :*

The anterior surface of the scrotum is supplied by the ilioinguinal nerves and the genital branch of the genitofemoral nerves, and the posterior surface is supplied by branches of the perineal nerves and the posterior cutaneous nerves of the thigh.

## **7.2. MALE REPRODUCTIVE PHYSIOLOGY**

### **The Hypothalamic-Pituitary-Gonadal Axis**

The hypothalamus is the integrative center of the reproductive axis and receives messages from both the central nervous system and the testes to regulate the production and secretion of **gonadotropin releasing hormone (GnRH)**. Neurotransmitters and neuropeptides have both inhibitory and stimulatory influence on the hypothalamus. The hypothalamus releases GnRH in a pulsatile nature which appears to be essential for stimulating the production and release of both **luteinizing hormone (LH) and follicle stimulating hormone (FSH)**. Interestingly and paradoxically, after the initial stimulation of these gonadotropins, the exposure to constant GnRH results in inhibition of their release.

LH and FSH are produced in the anterior pituitary and are secreted episodically in response to the pulsatile release of GnRH. LH and FSH both bind to specific receptors on the Leydig cells and Sertoli cells within the testis. Testosterone, the major secretory product of the testes, is a primary inhibitor of LH secretion in males. Testosterone may be metabolized in peripheral tissue to the potent androgen dihydrotestosterone or the potent estrogen estradiol. These androgens and estrogens act independently to modulate LH secretion. The mechanism of feedback control of

FSH is regulated by a Sertoli cell product called inhibin. Decreases in spermatogenesis are accompanied by decreased production of inhibin and this reduction in negative feedback is associated with reciprocal elevation of FSH levels. Isolated increased levels of FSH constitute an important, sensitive marker of the state of the germinal epithelium.

Prolactin also has a complex inter-relationship with the gonadotropins, LH and FSH. In males with hyperprolactinemia, the prolactin tends to inhibit the production of GnRH. Besides inhibiting LH secretion and testosterone production, elevated prolactin levels may have a direct effect on the central nervous system. In individuals with elevated prolactin levels who are given testosterone, libido and sexual function do not return to normal as long as the prolactin levels are elevated.

### **The Testes**

**Testosterone** is secreted episodically from the **Leydig cells** in response to LH pulses and has a diurnal pattern, with the peak level in the early morning and the trough level in the late afternoon or early evening. In the intact testis, LH receptors decrease or down-regulate after exogenous LH administration. In normal males, only 2% of testosterone is free or unbound. 44% is bound to testosterone-estradiol-binding globulin or TeBG, also called sex hormone-binding globulin. 54% of testosterone is bound to albumin and other proteins. These steroid-binding proteins modulate androgen action. TeBG has a higher affinity for testosterone than for estradiol, and changes in TeBG alter or amplify the hormonal milieu. TeBG levels are increased by estrogens, thyroid administration and cirrhosis of the liver and may be decreased by androgens, growth hormone and obesity. The biological actions of androgens are exerted on target organs that contain specific androgen receptor proteins. Testosterone leaves the circulation and enters the target cells where it is converted to the more potent androgen dihydrotestosterone by an enzyme 5-alpha-reductase.

The major functions of androgens in target tissues include

- 1) regulation of gonadotropin secretion by the hypothalamic-pituitary axis;
- 2) initiation and maintenance of spermatogenesis;

- 3) differentiation of the internal and external male genital system during fetal development;
- 4) promotion of sexual maturation at puberty.

### **Seminiferous Tubules**

The seminiferous tubules contain all the germ cells at various stages of maturation and their supporting Sertoli cells. These account for 85-90% of the testicular volume. **Sertoli cells** are a fixed-population of non-dividing support cells. They rest on the basement membrane of the seminiferous tubules. They are linked by tight junctions. These tight junctions coupled with the close approximation of the myoid cells of the peritubular contractile cell layers serve to form the blood-testis barrier. This barrier provides a unique microenvironment that facilitates spermatogenesis and maintains these germ cells in an immunologically privileged location. This isolation is important because spermatozoa are produced during puberty, long after the period of self-recognition by the immune system. If these developing spermatozoa were not immunologically protected, they would be recognized as foreign and attacked by the body's immune system. Sertoli cells appear to be involved with the nourishment of developing germ cells as well as the phagocytosis of damaged cells. Spermatogonia and young spermatocytes are lower down in the basal compartment of the seminiferous tubule, whereas mature spermatocytes and spermatids are sequestered higher up in the adluminal compartment.

The **germinal cells** or the **spermatogenic cells** are arranged in an orderly manner from the basement membrane up to the lumen. Spermatogonia lie directly on the basement membrane, and next in order, progressing up to the lumen, are found the primary spermatocytes, secondary spermatocytes and spermatids. There are felt to be 13 different germ cells representing different stages in the developmental process.

**Spermatogenesis** is a complex process whereby primitive stem cells or spermatogonia, either divide to reproduce themselves for stem cell renewal or they divide to produce daughter cells that will later become spermatocytes. The spermatocytes eventually divide and give rise to mature cell lines that eventually

give rise to spermatids. The spermatids then undergo a transformation into a spermatozoa. This transformation includes nuclear condensation, acrosome formation, loss of most of the cytoplasm, development of a tail and arrangement of the mitochondria into the middle piece of the sperm which basically becomes the engine room to power the tail. Groups of germ cells tend to develop and pass through spermatogenesis together. This sequence of developing germ cells is called a generation. These generations of germ cells are basically in the same stage of development. There are six stages of seminiferous epithelium development. The progression from stage one through stage six constitutes one cycle. In humans the duration of each cycle is approximately 16 days and 4.6 cycles are required for a mature sperm to develop from early spermatogonia. Therefore, the duration of the entire spermatogenic cycle in humans is 4.6 cycles times 16 days equals 74 days.

### **Hormonal Control of Spermatogenesis**

An intimate structural and functional relationship exists between the two separate compartments of the testis, i.e. the **seminiferous tubule** and the **interstitium** between the tubules. LH effects spermatogenesis indirectly in that it stimulates androgenous testosterone production. FSH targets Sertoli cells. Therefore, testosterone and PSH are the hormones that are directed at the seminiferous tubule epithelium. Androgen-binding protein which is a Sertoli cell product carries testosterone intracellularly and may serve as a testosterone reservoir within the seminiferous tubules in addition to transporting testosterone from the testis into the epididymal tubule.

The physical proximity of the Leydig cells to the seminiferous tubules and the elaboration by the Sertoli cells of androgen-binding protein, cause a high level of testosterone to be maintained in the microenvironment of the developing spermatozoa. The hormonal requirements for initiation of spermatogenesis appear to be independent of the maintenance of spermatogenesis. For spermatogenesis to be maintained like for instance after a pituitary obliteration, only testosterone is required. However, if spermatogenesis is to be re-initiated after the germinal epithelium has been allowed to regress completely, then both FSH and testosterone are required.

### **Transport-Maturation-Storage of Sperm**

Although the testis is responsible for sperm production, the **epididymis** is intimately involved with the **maturation, storage and transport** of spermatozoa. Testicular spermatozoa are non-motile and were felt to be incapable of fertilizing ova. Spermatozoa gain progressive motility and fertilizing ability after passing through the epididymis. The coiled seminiferous tubules terminate within the rete testis, which in turn coalesces to form the ductuli efferentes. These ductuli efferentes conduct testicular fluid and spermatozoa into the head of the epididymis. The epididymis consists of a fragile single convoluted tubule that is 5-6 meters in length. The epididymis is divided into the head, body, and tail.

Although epididymal transport time varies with age and sexual activity, the estimated transit time of spermatozoa through the epididymis in healthy males is approximately four days. It is during the period of maturation in the head and body of the epididymis that the sperm develop the increased capacity for progressive motility and also acquire the ability to penetrate oocytes during fertilization. The epididymis also serves as a reservoir or storage area for sperm. It is estimated that the extragonadal sperm reservoir is 440 million spermatozoa and that more than 50% of these are located in the tail of the epididymis. The sperm that are stored in the tail of the epididymis enter the vas deferens which is a muscular duct 30-35 cm in length. The contents of the vas are propelled by peristaltic motion into the ejaculatory duct. Sperm are then transported to the outside of the male reproductive tract by **emission and ejaculation**.

During emission, secretions from the seminal vesicles and prostate are deposited into the posterior urethra. Prior to ejaculation peristalsis of the vas deferens and bladder neck occur under sympathetic nervous control. During ejaculation, the bladder neck tightens and the external sphincter relaxes with the semen being propelled through the urethra via rhythmic contractions of the perineal and bulbourethral muscles. It is true that the first portion of the ejaculate contains a small volume of fluid from the vas deferens which is rich in sperm. The major volume of the seminal fluid comes from the seminal vesicles and secondarily the prostate. The seminal vesicles provide the nourishing substrate fructose as well as prostaglandins and coagulating substrates. A recognized function of the seminal plasma is its buffering effect on the acidic vaginal environment.



The **coagulum** formed by the ejaculated semen liquefies within 20 to 30 minutes as a result of prostatic proteolytic enzymes. The prostate also adds zinc, phospholipids, spermine, and phosphatase to the seminal fluid. The first portion of the ejaculate characteristically contains most of the spermatozoa and most of the prostatic secretions, while the second portion is composed primarily of seminal vesicle secretions and fewer spermatozoa.

### **Sperm at the time of fertilization**

Fertilization normally takes place within the uterine tubes after ovulation has occurred. During the menstrual mid cycle, the cervical mucus changes to become more abundant, thinner and more watery. These changes serve to facilitate entry of the sperm into the uterus and to protect the sperm from the highly acidic vaginal secretions. Physiologic changes in the spermatozoa known as **capacitation** occur within the female reproductive tract in order for fertilization to occur. As the sperm cell interacts with the egg, there is initiation of new flagellar movement called hyperactive motility and morphologic changes in the sperm that result in the release of lytic enzymes and exposure of parts of the sperm's structure known as the **acrosome reaction**. As a result of these changes, the fertilizing sperm cell is able to reach the oocyte, traverse its various layers, and become incorporated into the ooplasm of the egg.

## **7.3. INFERTILITY**

‘Infertility is the inability of a sexually active, non-contracepting couple to achieve pregnancy in one year’ (WHO).

### **Epidemiology and aetiology**

About 15% of couples do not achieve pregnancy within 1 year and seek medical treatment for infertility. Eventually 5% remain unwillingly childless. Infertility affects both men and women. In 50% of involuntarily childless couples a male infertility associated factor is found together with abnormal semen parameters. A fertile partner may compensate for the fertility problem of the men and thus infertility usually becomes manifest if both partners have reduced fertility.

Male fertility can be reduced as a result of:

- congenital or acquired urogenital abnormalities;
- urogenital tract infections;
- increased scrotal temperature (e.g as a consequence of varicocele);

- endocrine disturbances;
- genetic abnormalities;
- immunological factors

In 30-40% of cases, no male infertility associated factor is found (idiopathic male infertility). These men present with no previous history of fertility problems and have normal findings on physical examination and endocrine laboratory testing. Semen analysis, however, reveals a decreased number of spermatozoa (oligozoospermia), decreased sperm motility (asthenozoospermia) and many abnormal forms of sperm (teratozoospermia); these sperm abnormalities usually occur together and are called oligo-astheno-teratozoospermia (OAT) syndrome. Idiopathic male infertility may be explained by several factors, including endocrine disruption as a result of environmental pollution, reactive oxygen species or genetic abnormalities.

#### **Summary of the main male infertility associated factors(WHO)**

<b>Associated factors</b>	<b>Percentage in causing male infertility</b>
Idiopathic male infertility	31 %
Maldescended testes	7.8 %
Urogenital infection	8.0 %
Disturbances of semen deposition and sexual factors	5.9 %
General and systemic disease	3.1 %
Varicocele	15.6 %
Hypogonadism	8.9 %
Immunological factors	4.5 %
Obstructions	1.7 %
Other abnormalities	5.5 %

#### **Prognostic factors**

Prognostic factors for male infertility are:

- duration of infertility;

- primary or secondary infertility;
- results of semen analysis;
- age and fertility status of female partner.

The cumulative pregnancy rate in infertile couples with 2 years of follow-up and oligozoospermia as the primary cause of infertility is 27%. In many Western countries, women postpone their first pregnancy until they have finished their education and have started a career. Female age is the most important single variable influencing outcome in assisted reproduction .

### **History and Physical Examination**

The history should focus on developmental stages such as puberty and growth spurts, as well as androgen-dependent events such as early morning erections, frequency and intensity of sexual thoughts, and frequency of masturbation or intercourse. Although libido and the overall frequency of sexual acts are decreased in androgen-deficient men, young hypogonadal men may achieve erections in response to visual erotic stimuli. Men with acquired androgen deficiency often report decreased energy and increased irritability.

The physical examination should focus on secondary sex characteristics such as hair growth, gynecomastia, testicular volume, prostate, and height and body proportions. *Eunuchoid proportions* are defined as an arm span >2 cm greater than height and suggest that androgen deficiency occurred before epiphyseal fusion. Hair growth in the face, axilla, chest, and pubic regions is androgen-dependent; however, changes may not be noticeable unless androgen deficiency is severe and prolonged. Ethnicity also influences the intensity of hair growth Testicular volume is best assessed by using a Prader orchidometer.

Testes range from 3.5 to 5.5 cm in length, which corresponds to a volume of 12–25 mL. Advanced age does not influence testicular size, although the consistency becomes less firm. Asian men generally have smaller testes than western Europeans, independent of differences in body size. Because of its possible role in infertility, the presence of varicocele should be sought by palpation while the patient is standing; it is common on the left side. Patients with Klinefelter syndrome have markedly reduced testicular volumes (1–2 ml).

## 7.4. INVESTIGATIONS

### 7.4.1. SEMEN ANALYSIS

Andrological examination is indicated if semen analysis shows abnormalities compared with reference values. Important treatment decisions are based on the results of semen analysis and standardisation of the complete laboratory work-up is essential. Ejaculate analysis has been standardised by the WHO and disseminated by publication of the *WHO Laboratory Manual for Human Semen and Sperm-Cervical Mucus Interaction* (5th edition). It is the consensus that modern spermatology must follow these guidelines, without exception.

**Table :Lower reference limits (5th centiles and their 95% confidence intervals) for semen characteristics.**

Parameter	Lower reference limit
Semen volume (mL)	1.5 (1.4–1.7)
Total sperm number (10 <sup>6</sup> per ejaculate)	39 (33–46)
Sperm concentration (10 <sup>6</sup> per mL)	15 (12–16)
Total motility (PR+NP, %)	40 (38–42)
Progressive motility (PR, %)	32 (31–34)
Vitality (live spermatozoa, %)	58 (55–63)
Sperm morphology (normal forms, %)	4 (3.0–4.0)
Other consensus threshold value	
pH	> 7.2
Peroxidase-positive leukocytes(10 <sup>6</sup> per mL)	< 1.0
MAR test (motile spermatozoa with bound particles, %)	< 50
Immunobead test (motile spermatozoa with bound beads, %)	< 50
Seminal zinc (μmol/ejaculate)	> 2.4
Seminal fructose (μmol/ejaculate)	> 13
Seminal neutral glucosidase (mU/ejaculate)	> 20

*MAR = Mixed antiglobulin reaction; PR = progressive; NP = non-progressive*

*Frequency of semen analysis*

If the results of semen analysis are normal according to WHO criteria, one test should be sufficient. If the results are abnormal in at least two tests, further andrological investigation is indicated.

It is important to distinguish between the following:

- Oligozoospermia: < 15 million spermatozoa/mL.
- Asthenozoospermia: < 32% motile spermatozoa.
- Teratozoospermia: < 4% normal forms.

Quite often, all three pathologies occur simultaneously as OAT syndrome. In extreme cases of OAT syndrome (< 1 million spermatozoa/mL), as in azoospermia, there is an increased incidence of obstruction of the male genital tract and genetic abnormalities.

#### **7.4.2. HORMONE EVALUATION**

The incidence of primary endocrine defects in infertile men is less than 3%. Such defects are rare in men with a sperm concentration of greater than 5 million per cc. Because of the episodic nature of LH secretion and its short half life, a single LH determination has an accuracy of plus or minus 50%. Similarly, testosterone is secreted episodically in response to LH pulses and has a diurnal pattern with an early morning peak. Serum FSH has a longer half life, and these fluctuations are less obvious. A low testosterone level is one of the best indicators of hypogonadism of hypothalamic or pituitary origin. Low LH and FSH values concurrent with low testosterone levels indicate hypogonadotropic hypogonadism. Elevated FSH and LH values help to distinguish primary testicular failure (hypergonadotropic hypogonadism) from secondary testicular failure (hypogonadotropic hypogonadism). Most patients with primary hypogonadism have severe, irreversible testicular defects. On the other hand, secondary hypogonadism has a hypothalamic or pituitary origin and infertility may be correctable.

Elevated FSH levels are usually a reliable indicator of germinal epithelial damage and are usually associated with azoospermia or severe oligospermia, depicting significant and usually irreversible germ cell damage. In azoospermic and severely oligospermic patients with normal FSH levels, primary spermatogenic defects cannot be distinguished from obstructive lesions by hormonal investigation alone. Therefore, scrotal exploration and testicular biopsy should be considered. An elevated FSH level associated with small, atrophic testes implies irreversible

infertility and a biopsy is not warranted. The diagnostic value of prolactin measurement is extremely low in men with semen abnormalities unless these are associated with decreased libido, erectile dysfunction, and evidence of hypogonadism. Prolactin measurement is warranted in patients with low serum testosterone levels without an associated increase in serum LH levels.

Individuals with gynecomastia, obesity, history of alcohol abuse, or suspected androgen resistance should have a serum estradiol level. In men with a history of precocious puberty, one should consider congenital adrenal hyperplasia. In the common variant (21-hydroxylase deficiency), serum levels of 17-hydroxyprogesterone are elevated. In 11-hydroxylase deficiency, serum 11-Deoxycortisol levels are elevated.

In patients with hypogonadotropic hypogonadism, the pituitary hormones other than LH and FSH should also be assessed like adrenal corticotrophic hormone (ACTH), thyroid stimulating hormone (TSH), and growth hormone (GH). Thyroid dysfunction is such a rare cause of infertility that routine screening for thyroid abnormality should be discouraged.

#### **7.4.3. CHROMOSOMAL STUDIES**

Only in isolated cases has infertility been documented in association with a specific chromosomal abnormality. Subtle genetic studies can be considered in men with severe oligospermia and azospermia to look for both autosomal and sex chromosomal abnormalities. The diagnostic yield is greatest in men with small testes, azospermia, and elevated FSH levels.

#### **7.4.4. IMMUNOLOGIC STUDIES**

Antisperm antibodies, although not an absolute cause of infertility, appear to be capable of reducing the likelihood of pregnancy. The concentration of antisperm antibodies in the semen influence the degree of impairment. Antisperm antibodies do not lyse or immobilize sperm. They have not generally been found to be associated with decreased density or motility, but they do appear to interfere with sperm function by simply attaching to the plasma membrane of the spermatozoa. Sperm agglutination may be caused by antisperm antibody attachment. Infections may lead to agglutination of sperm as well though. Whenever agglutination is observed, the

possibility of infection should be evaluated with appropriate semen cultures. Antisperm antibodies should be suspected in couples with repeated abnormal post coital tests. Antisperm antibodies appear to interfere with normal penetration and transit of sperm through normal cervical mucus.

Antisperm antibodies also should be suspected in subfertile men with a history compatible with disruption of the integrity of the genital tract, and when sperm agglutination or reduced motility is observed on semen analysis. Immunological factors may also play a role in the pathogenesis of 10-20% cases of "unexplained infertility". Antisperm antibodies can be found either in the circulation or in the seminal plasma or directly on the sperm surface

#### **7.4.5. SPECIAL AND SPERM FUNCTION TESTS**

##### **Sperm-Cervical Mucus Interaction**

For fertilization to take place in-vivo, the sperm must be able to get past the cervical mucus. The post coital test assesses the ability of sperm to penetrate and progress through cervical mucus. Cervical mucus is examined 2-8 hours after intercourse at the time of expected ovulation. The presence of greater than 10-20 motile sperm per high power field is generally accepted as a normal post coital test. Post coital testing is a bio-assay that provides information concerning sexual function, motility of the sperm, and the sperm-mucus interaction. A positive result implies normal semen and mucus. A poor result in an individual with normal semen parameters implies either cervical abnormality or the presence of sperm antibodies. Sperm-mucus interaction may also be assessed in-vitro. This allows for some degree of standardization. Human or bovine ovulatory mucus is placed in a capillary tube. Sperm penetration into the mucus is measured over a fixed period of time. These in-vitro techniques enable one to compare patient specimens with fertile sperm and control some of the variables associated with standard post coital testing.

##### **Sperm Penetration Assays**

Penetration of an oocyte requires sperm capacitation, acrosome reaction, fusion and incorporation into the oocyte. Cross-species fertilization is normally prevented by the zona pellucida. Hamster eggs stripped of the zona pellucida can be penetrated by human sperm. This in-vitro functional test measures the penetration ability of the sperm. The end point of this assay is penetration of the ovum and

decondensation of sperm heads. The percentage of oocytes penetrated and the number of sperm penetrating each oocyte are measured. Sperm that are capable of multiple penetrations per oocyte appear to have greater fertilizing potential than sperm that do not penetrate. The results of the sperm penetration assay (SPA) have primarily been used to predict the results of assisted reproductive techniques, in particular, in-vitro fertilization. Men with sperm of low SPA score are less likely to achieve a spontaneous pregnancy than those with a high SPA score.

#### **Acrosome Evaluation**

The acrosome reaction is necessary for fertilization to take place. Evaluating the ability of sperm to undergo the acrosome reaction may provide an additional assessment of sperm function. It is possible to determine the acrosomal status of sperm by utilizing electron microscopy, staining, immunofluorescent techniques and monoclonal antibodies. It is also possible to induce an acrosome reaction with ionophores and human zona pellucida. These techniques are labor-intensive and the ability of the acrosomal status to predict fertility must be confirmed.

#### **Hypo-osmotic Swelling**

It has been found that when sperm from normal fertile men are exposed to a known solution of fructose and sodium citrate, 33-80% of the spermatozoa will exhibit tail swelling. Sperm that are not viable or sperm with non-functioning membranes do not swell. This appears to be explained by the ability of the normal cell membrane to maintain an osmotic gradient. Attempts have been made to correlate this finding with the fertilization potential for semen samples. Samples with greater than 62% swelling are able to fertilize ova, whereas less than 60% swelling is observed in samples of infertile semen. This test has not been widely embraced and is currently a research tool.

#### **7.4.6. BACTERIOLOGIC INVESTIGATION**

If urinalysis is abnormal or bacterial prostatitis is implicated by either the history or physical examination, appropriate cultures are indicated. The common sexually transmitted organisms such as chlamydia trachomatis, mycoplasma hominus and ureaplasma urealyticum have been implicated in reproductive failure in men and women.



#### **7.4.7. TESTICULAR BIOPSY AND VASOGRAPHY**

In azoospermic patients or selected cases of severe oligospermia with normal FSH levels, primary spermatogenic defects cannot be differentiated from obstructive lesions by hormonal investigation alone, and testicular biopsy and sometimes vasography should be considered. When patients have azoospermia or severe oligospermia in conjunction with markedly shrunken testes and serum FSH levels that are at least twice normal, testicular biopsy can be avoided as it will indicate untreatable testicular pathology and only provide a definitive diagnosis which allows the patient to investigate alternatives. The exception is the patient who has undergone chemotherapy in whom the elevated FSH level may normalize with return of spermatogenesis.

Before biopsy, at least two semen analysis should reveal azoospermia and retrograde ejaculation should be ruled out by examining a post ejaculatory urine specimen. In men with acidic semen, i.e. pH of less than 7.0 and a volume of less than 1 cc, suspect ejaculatory duct obstruction or congenital absence of the seminal vesicles and vas deferens. For confirmation, seminal fructose levels should be determined. The presence of fructose rules out obstruction or atresia of the ejaculatory ducts but does not verify total ductal patency. The testicular tissue is always placed atraumatically into a container of Bouin's or Zenker's solution. Formalin should be avoided as it distorts the testicular architecture.

Vasography is used to rule out obstruction of the vas deferens, seminal vesicles, and ejaculatory ducts. Vasography should be performed only at the time of definitive reconstructive surgery. A vasotomy is generally performed at the junction of the straight and convoluted portions of the vas. Any fluid obtained from the vasotomy is evaluated for the presence of sperm. Patency of the ductal structures distal to this point is assessed by the injection of radioopaque contrast solution. Injection of 3-5 cc of 50% Hypaque or Renografin-60 will provide adequate films of the vas, seminal vesicles and ejaculatory ducts. Methylene blue may also be instilled as the bladder is catheterized. The presence of blue or green urine documents patency distal to the instillation site. Retrograde injection of solution towards the testis makes images of the epididymal anatomy that are extremely difficult to interpret. There is also significant risk of causing epididymal injury and should be avoided.

#### **7.4.8. RADIOLOGIC INVESTIGATION**

Both clinical and laboratory investigations have provided convincing evidence that varicoceles are detrimental to spermatogenesis in some men. It has been shown that improvement in semen quality after varicocelectomy bears no relation to the palpable size of the varicocele. Because small but clinically significant varicoceles may be missed even on careful physical exam, several diagnostic techniques have been tried. The doppler pencil-probe stethoscope was one of the earliest techniques and is easily utilized in an office setting.

Color flow duplex ultrasonography is a superior way to measure the diameters of the spermatic cord veins by imaging these vessels, at rest and during a Valsalva maneuver, as well as to quantify and qualify the flow of blood through these veins. It has been shown to be 85% sensitive in the detection of subclinical varicoceles when venography was used as the "gold standard". Duplex ultrasonography is certainly useful when there is a question on physical examination because it is an objective characterization of the pampiniform veins. Venography seems to be the most specific method of identification of varicoceles but it is invasive and associated with some morbidity. Transrectal ultrasonography is ideally suited now for evaluation of the prostate, seminal vesicles and ejaculatory ducts in patients with azoospermia or low ejaculate volumes.

Although vasography has been used to visualize the seminal vesicles and ejaculatory ducts, transrectal ultrasonography is accurate, inexpensive and relatively non-invasive. It can provide detailed images of the seminal vesicles and ejaculatory ducts. Vasography and testicular biopsy may be necessary to rule out testicular failure or proximal obstruction if the transrectal ultrasound study is normal in the azoospermic patient. It is easy to see that transrectal ultrasonography provides valuable information and may be used in place of vasography to identify obstruction or congenital anomalies of the ejaculatory ducts or seminal vesicles.

## **7.5. FACTORS CAUSING MALE INFERTILITY**

### **7.5.1. TESTICULAR DEFICIENCY (SPERMATOGENIC FAILURE)**

#### **Definition**

Testicular deficiency as a consequence spermatogenic failure is caused by conditions other than hypothalamic-pituitary disease and obstructions of the male genital tract. It is the most frequent form of reduced male fertility. Testicular deficiency may have different aetiologies and present clinically as severe Oligoasthenospermia or non-obstructive Azoospermia.

#### **Aetiology**

##### **Causes of testicular deficiency.**

##### **Congenital factors**

- Anorchia
- Testicular dysgenesis/cryptorchidism
- Genetic abnormalities (Karyotype anomalies including Klinefelter's syndrome; Y chromosome
- microdeletions; other gene mutations

##### **Acquired factors**

- Trauma
- Testicular torsion
- Post-inflammatory (orchitis) forms
- Exogenous factors (medications, cytotoxic drugs, irradiation, heat)
- Systemic diseases (liver cirrhosis, renal failure)
- Varicocele
- Surgeries that can damage vascularisation of the testes

##### **Idiopathic forms**

- Unknown aetiology

##### **History and physical examination**

Typical findings from the history and physical examination of a patient with testicular deficiency are:

- cryptorchidism;
- testicular torsion;
- genito-urinary infection;

- testicular trauma;
- exposure to environmental toxin(s);
- gonadotoxic medication;
- exposure to radiation or chemical(s);
- testicular cancer;
- absence of testes;
- abnormal secondary sexual characteristics;
- gynaecomastia;
- cryptorchidism;
- abnormal testicular volume and/or consistency;
- varicocele.

## **Investigation**

### *Semen analysis*

In Non Obstructive Azoospermia, semen analysis shows normal ejaculate volume and azoospermia after several centrifugations. A recommended method is semen centrifugation at 600 g for 10 min and thorough microscopic examination of the pellet (x 600). The upper fluid is then re-centrifuged (8000 g) for an additional 10 min and examined. All samples can be stained and re-examined microscopically.

### *Hormonal determinations*

Usually, in men with testicular deficiency hypergonadotrophic hypogonadism is present (high FSH and LH), sometimes also low levels of Testosterone. Generally, the levels of follicle-stimulating hormone (FSH) correlate with the number of spermatogonia:

- When spermatogonia are absent or markedly diminished, FSH values are usually elevated.
- When the number of spermatogonia is normal, but spermatocyte or spermatid blockage is complete, FSH values are within normal range.
- However, for an individual patient, FSH levels do not accurately predict the spermatogenesis status. Preliminary data indicate a stronger correlation between low inhibin B level and spermatogenic damage

### *Testicular biopsy*

Testicular biopsy can be part of an ICSI treatment in patients with clinical evidence of NOAA good correlation is seen between diagnostic biopsy histology and the likelihood of finding mature sperm cells during testicular sperm retrieval and ICSI .

## **7.5.2. GENETIC DISORDERS IN INFERTILITY**

### **Chromosomal abnormalities**

Chromosome abnormalities can be numerical (e.g. trisomy) or structural (e.g. inversions or translocations) . Based on the frequencies of chromosomal aberrations in patients with different sperm concentration, karyotype analysis should be indicated in azoospermic men and in oligozoospermic men with < 10 millions spermatozoa/ML.

### **Sex chromosome abnormalities (Klinefelter's syndrome and variants [47,XXY; 46,XY/ 47, XXY mosaicism])**

**Klinefelter's syndrome** is the most frequent sex chromosome abnormality. Adult men with Klinefelter's syndrome have small firm testicles devoid of germ cells. The phenotype can vary from a normally virilised man to one with stigmata of androgen deficiency, including female hair distribution, scanty body hair and long arms and legs because of late epiphyseal closure. Leydig cell function is commonly impaired in men with Klinefelter's syndrome.

Testosterone levels may be normal or low, oestradiol levels normal or elevated and FSH levels increased. Libido is often normal despite low testosterone levels, but androgen replacement may be needed as the patient ages. Germ cell presence and sperm production are variable in men with Klinefelter's mosaicism, 46,XY/47,XXY.

### **Genetic defects**

#### ***X-linked genetic disorders and male fertility***

Each man has only one X-chromosome. An X-linked recessive disorder manifests in males, and the defect will be transmitted to daughters but not to sons.

#### ***Kallmann's syndrome***

The most common X-linked disorder in infertility practice is Kallmann's syndrome. The predominant form is an X-linked recessive disorder caused by a mutation in the KALIG-1 gene on Xp22.3 . Patients with Kallmann's syndrome have hypogonadotropic hypogonadism and anosmia they might have other clinical

features, including, facial asymmetry, cleft palate, colour blindness, deafness, maldescended testes and renal abnormalities.

### ***Mild Androgen Insensitivity syndrome***

The AR gene is located on the long arm of the X chromosome. Mutations in the AR gene may result in mild to complete androgen insensitivity. The phenotypic features of complete androgen insensitivity syndrome (CAIS) are female external genitalia and absence of pubic hair (Morris syndrome). Patients with mild AIS have male infertility as their primary or even sole symptoms.

### **Y chromosome and male infertility**

The first association between azoospermia and microscopically detectable deletions of the long arm of the Y chromosome has been demonstrated by Tiepolo and Zuffardi in 1976. Only several years after the discovery of the three AZF regions, with the precise knowledge of the Y structure in Yq11, it became evident that the AZFb and AZFc regions are overlapping and the AZFd region does not exist. Deletions which are clinically relevant remove partially, or in the large majority of cases completely, one or more AZF regions and they represent the most frequent molecular genetic cause of severe oligozoospermia and Azoospermia.

### **7.5.3. OBSTRUCTIVE AZOOSPERMIA (OA)**

#### **Definition**

Obstructive Azoospermia is the absence of both spermatozoa and spermatogenic cells in semen and postejaculate urine due to bilateral obstruction of the seminal ducts. It is less common than Non Obstructive Azoospermia and occurs in 15-20% of men with azoospermia. Common causes of OA are summarised below.

**Classification of OA on the basis of ductal obstruction due to congenital and acquired causes.**

<b>Conditions</b>	<b>Congenital</b>	<b>Acquired</b>
Epididymal obstruction	Idiopathic epididymal obstruction	Post-infective (epididymitis) Post-surgical (epididymal cysts)
Vas deferens obstruction	Congenital absence of vas deferens	Post-vasectomy, Post-surgical (hernia, scrotal surgery)
Ejaculatory duct obstruction	Prostatic cysts (Mullerian cysts)	Post-surgical (bladder neck surgery) Post-infective

Men with OA present with normal size testes and normal FSH. On examination, enlargement of the epididymis can be found. Sometimes, the vas deferens is absent due to congenital factors or previous inguinal or scrotal surgery. Obstructions in primary infertile men are often present at the epididymal level; other sites of obstruction are the ejaculatory ducts and the vas deferens. In 25% of men with a suspected obstruction, no spermatozoa are found in the epididymis during scrotal exploration, indicating an intratesticular obstruction.

## **Classification**

### ***Intratesticular obstruction***

Intratesticular obstruction occurs in 15% of OA. Congenital forms (dysjunction between rete testis and efferent ductules) are less common than acquired forms, (i.e. post-inflammatory or post-traumatic obstructions). Acquired forms are often associated with an obstruction of epididymis and vas deferens.

### ***Epididymal obstruction***

Epididymal obstruction is the most common cause of OA, affecting 30-67% of azoospermic men with a serum FSH less than twice the upper limit of normal. Azoospermia caused by surgery might occur after epididymal surgery, such as cyst removal.

### ***Vas deferens obstruction***

Vas deferens obstruction is the most common cause of acquired obstruction following vasectomy for sterilisation, with possible subsequent germ cell impairment and fibrosis. Vasal obstruction may also occur after herniotomy.

### ***Ejaculatory duct obstruction***

Ejaculatory duct obstruction is found in about 1-3% of OA. These obstructions can be classified as cystic or post-inflammatory. Cystic obstructions are usually congenital (i.e. Mullerian duct cyst or urogenital sinus/ejaculatory duct cysts) and are medially located in the prostate between the ejaculatory ducts.

### ***Functional obstruction of the distal seminal ducts***

Functional obstruction of the distal seminal ducts has been seen in juvenile diabetes and polycystic kidney disease; however, no relevant pathology has been found in most cases. Results of semen analysis vary between azoospermia, cryptozoospermia and severe OAT syndrome.

## **Diagnosis**

### ***Clinical history***

- haematospermia;
- post-ejaculatory pain;
- previous or present urethritis or prostatitis;
- obstructive or irritative urinary symptoms;
- previous scrotal enlargement or pain or surgery;
- previous inguinal herniorrhaphy or traumas;
- chronic sino-pulmonary infections.

### ***Clinical examination***

Clinical examination should follow suggestions for investigation of the infertile man. The following findings indicate Obstructive Azoospermia:

- At least one testis > 15 mL volume (although a smaller testicular volume may be found in some patients with Obstructive Azoospermia and concomitant partial testicular failure).
- Enlarged and hardened epididymis.
- Nodules in the epididymis or vas deferens.
- Absence or partial atresia of the vas.
- Signs of urethritis.
- Prostatic abnormalities.

### ***Semen analysis***

At least two examinations must be carried out at an interval of 2-3 months, according to the WHO. Azoospermia means absence of spermatozoa after centrifugation at x400 magnification. Careful repeat observation of several smears after semen liquefaction is needed. If no spermatozoa are found in wet preparation, aliquots or the whole semen sample should be centrifuged (600 rpm for 15 min). The pellet must be examined for spermatozoa. A semen volume < 1.5 mL and with an acid pH and low fructose level suggests ejaculatory duct obstruction. When semen volume is low, a search must be made for spermatozoa in urine after ejaculation, as their presence confirms an ejaculatory disorder. Absence of spermatozoa and immature germ cells in semen smears suggest complete proximal or distal seminal duct obstruction.

### ***Hormone levels***



Serum FSH levels may be normal but do not exclude a testicular cause of azoospermia (e.g. spermatogenic arrest). FSH is normal in 40% of men with primary spermatogenic failure. Inhibin B appears has a higher predictive value for normal spermatogenesis .

### ***Ultrasonography***

Scrotal ultrasound is mandatory and helps to find signs of obstruction (e.g dilatation of rete testis, enlarged epididymis with cystic lesions and absence of vas deferens) and to exclude signs of testicular dysgenesis (e.g. non-homogenous testicular architecture and microcalcifications

### ***Testicular biopsy***

In selected cases, testicular biopsy may be indicated to exclude spermatogenic failure. Testicular biopsy should be combined with extraction of testicular spermatozoa (i.e. TESE) for cryopreservation and subsequent ICSI, when surgical recanalisation cannot be carried out or has failed. A scoring system for testicular biopsies is given in.

**Table :Scoring system for testicular biopsies (Johnsen score)\*.**

#### **Score    Histological criteria**

10	Full spermatogenesis
9	Slightly impaired spermatogenesis, many late spermatids, disorganised epithelium
8	< 5    spermatozoa per tubule, few late spermatids
7	No spermatozoa, no late spermatids, many early spermatids
6	No spermatozoa, no late spermatids, few early spermatids
5	No spermatozoa or spermatids, many spermatocytes
4	No spermatozoa or spermatids, few spermatocytes
3	Spermatogonia only
2	No germinal cells, Sertoli cells only
1	No seminiferous epithelium

\* *From Johnsen, 1970 .*

#### **7.5.4. VARICOCELE**

##### **Introduction**

Varicocele is a common abnormality with the following andrological implications:

- Failure of ipsilateral testicular growth and development.
- Symptoms of pain and discomfort.
- Infertility.

The predominant testicular pathologic feature of varicoceles is decreased spermatogenesis because of premature sloughing of immature germ cells into the lumen of the seminiferous epithelium, sometimes in conjunction with maturation arrest.

##### **Classification**

The following classification of varicocele is useful in clinical practice:

Subclinical: not palpable or visible at rest or during Valsalva manoeuvre, but demonstrable by special tests (Doppler ultrasound studies).

- Grade 1: palpable during Valsalva manoeuvre but not otherwise.
- Grade 2: palpable at rest, but not visible.
- Grade 3: Visible and palpable at rest.

##### **Diagnosis :**

The diagnosis of varicocele is made by clinical examination and can be confirmed by colour Doppler analysis. In centres where treatment is carried out by antegrade or retrograde sclerotherapy or embolisation, diagnosis is additionally confirmed by X-ray.

##### **Basic considerations**

• Varicocele is a physical abnormality present in 11% of adult males and in 25% of those with abnormal semen analysis.

• The exact association between reduced male fertility and varicocele is not known, but WHO data clearly indicates that varicocele is related to semen abnormalities, decreased testicular volume and decline in Leydig cell function.

### **7.5.5. HYPOGONADISM**

#### **Introduction**

Hypogonadism is characterized by impaired testicular function which may affect spermatogenesis and/or testosterone synthesis. The symptoms of hypogonadism depend on the degree of androgen deficiency and whether the condition develops before or after pubertal development of the secondary sex characteristics. The aetiological and pathogenetic mechanisms of male hypogonadism can be divided into three main categories:

1. Primary (hypergonadotrophic) hypogonadism due to testicular failure.
2. Secondary (hypogonadotrophic) hypogonadism caused by insufficient gonadotrophin-releasing hormone (GnRH) and/or gonadotrophin (FSH, LH) secretion.
3. Androgen insensitivity (end-organ resistance).

#### **Disorders with male hypogonadism.**

##### **Primary (hypergonadotrophic) hypogonadism (testicular failure)**

- Anorchia
- Maldescended testes
- Klinefelter's syndrome
- Y chromosome microdeletions
- Numerical and structural chromosomal anomalies
- Trauma, testicular torsion, orchitis
- Iatrogenic (surgery, medications, irradiation, cytostatic drugs)

##### **Secondary (hypogonadotrophic) hypogonadism (secondary testicular failure)**

- Congenital -
  - Idiopathic hypogonadotrophic hypogonadism
  - Kallmann's syndrome
- Acquired -
  - Tumours in the following regions: dyencephalon (craniopharyngiomas, meningiomas) - hypothalamus or pituitary
  - Empty sella
  - Granulomatous illnesses
  - Fractures of the skull base.

### **7.5.6. CRYPTORCHIDISM**

Cryptorchidism is the most common congenital abnormality of the male genitalia and is found in 2–5% of newborn boys, depending on gestational age (frequency of cryptorchidism is higher in premature boys), and age after birth. At the age of 3 months, the incidence of cryptorchidism falls spontaneously to 1–2%. Approximately 20% of undescended testes are non-palpable and can be located within the abdominal cavity. The aetiology of cryptorchidism is multifactorial; both disrupted endocrine regulation and several gene defects might be involved.

For a normal descent of the testes, a normal hypothalamo–pituitary–gonadal axis is needed. Endocrine disruption in early pregnancy can potentially affect gonadal development and normal descent of the testes; however, most boys with maldescended testes show no endocrine abnormalities after birth. It has been postulated that cryptorchidism may be a part of the so-called testicular dysgenesis syndrome (TDS)

#### ***Relationship with fertility***

Semen parameters are often impaired in men with a history of cryptorchidism . Surgical treatment during the first or second year of life might have a positive effect on subsequent fertility. However, there is no definitive proof of the protective effect of early orchidopexy. In men with a history of unilateral cryptorchidism, paternity is almost equal (89.7%) to that in men without cryptorchidism (93.7%). In men with unilateral cryptorchidism, paternity is independent of age at orchidopexy, and preoperative testicular location and testicular size . However, a history of unilateral cryptorchidism can result in reduced fertility potential (i.e. causing a prolonged time to achieve pregnancy). In men with bilateral cryptorchidism, oligozoospermia can be found in 31% and azoospermia in 42%. In cases of bilateral cryptorchidism, the rate of paternity is only 35–53%.

### **7.5.7. IDIOPATHIC MALE INFERTILITY**

#### **Introduction**

No demonstrable cause of male infertility, other than idiopathic OAT syndrome, is found in at least 44% of infertile men.

## **Empirical treatments**

A wide variety of empirical drug treatments of idiopathic male infertility have been used; however, there is little scientific evidence for an empirical approach. Androgens, hCG/human menopausal gonadotropin, bromocriptine,  $\alpha$ -blockers, systemic corticosteroids and magnesium supplementation are not effective in the treatment of OAT syndrome. FSH and anti-oestrogens in combination with testosterone might be beneficial in selection of patients; however, further evaluation of these agents in multicentre studies is required.

### **7.5.8. MALE ACCESSORY GLAND INFECTIONS**

Infections of the male urogenital tract are potentially curable causes of male infertility. The WHO considers urethritis, prostatitis, orchitis, and epididymitis to be male accessory gland infections (MAGIs). However, specific data are not available to confirm that these diseases have a negative influence on sperm quality and male fertility in general.

#### ***Urethritis***

Infectious, sexually-acquired urethritis can be caused by various pathogens, most commonly *Chlamydia trachomatis*, *Ureaplasma urealyticum*, and *Neisseria gonorrhoea*. Non-infectious causes of urethritis include irritations as a result of allergic reactions, trauma and manipulations. Urethral discharge and bladder voiding problems are the predominant symptoms of acute urethritis. Diagnosis is based on analysis of urethral smear and first-voided urine.

#### ***Prostatitis***

It represents the most common urological diagnosis in men < 50 years of age. Traditionally, prostatitis has been classified into four clinical entities:

- Acute bacterial prostatitis (ABP) and prostatic abscess as a sequela/complication of ABP.
- Chronic bacterial prostatitis (CBP).
- Non- or abacterial prostatitis (NBP).
- Postatodynia.

#### ***Orchitis and epididymo-orchitis***

Orchitis is an inflammatory lesion of the testis associated with a predominantly WBC exudate inside and outside the seminiferous tubules, which

potentially results in tubular sclerosis. The inflammation causes pain and swelling. Chronic inflammatory alterations in the seminiferous tubules disrupt the normal process of spermatogenesis and alter sperm number and quality.

#### *Diagnosis*

Epididymo-orchitis usually presents with unilateral scrotal pain .Diagnosis is based on past medical history and palpation. Ultrasonography usually indicates a swollen, enlarged testis. The sonographic features of the tissue do not allow any differential diagnosis.

#### **Epididymitis**

Inflammation of the epididymis causes unilateral pain and swelling, usually with acute onset. Among sexually active men < 35 years of age, epididymitis is most often caused by *C. trachomatis* or *N. gonorrhoea* .Sexually transmitted epididymitis is usually accompanied by urethritis. Non-sexually transmitted epididymitis is associated with UTI and occurs more often in men aged > 35 years, those who have recently undergone urinary tract instrumentation or surgery, and those who have anatomical abnormalities.

#### **7.5.9. DISORDERS OF EJACULATION**

Disorders of ejaculation are uncommon, but important, causes of male infertility. This group includes several heterogeneous dysfunctions, which can be either organic or functional.

##### ***Classification and aetiology***

##### **Anejaculation**

Anejaculation involves complete absence of antegrade or retrograde ejaculation and is caused by failure of emission of semen from the seminal vesicles, the prostate and the ejaculatory ducts into the urethra. True anejaculation usually is associated with a normal orgasmic sensation. Occasionally (e.g. in incomplete spinal cord injuries), this sensation is altered or decreased. True anejaculation always is associated with central or peripheral nervous system dysfunction or with drugs

***Aetiology of anejaculation.***

<b>Neurogenic</b>	<b>Drug-related</b>
<ul style="list-style-type: none"><li>• Spinal cord injury •</li><li>• Cauda equina lesion</li><li>• Retroperitoneal lymphadenectomy •</li><li>• Aortoiliac or horseshoe-kidney surgery •</li><li>• Colorectal surgery</li><li>• Multiple sclerosis</li><li>• Parkinson's disease</li><li>• Autonomic neuropathy (diabetes mellitus)</li></ul>	<ul style="list-style-type: none"><li>Antihypertensives</li><li>Antipsychotics</li><li>Antidepressants</li><li>Alcohol</li></ul>

***Anorgasmia***

Anorgasmia is the inability to reach orgasm and can give rise to anejaculation. Anorgasmia is often a primary condition and its cause is usually psychological. Some patients report sporadic events of nocturnal emission or of ejaculation occurring during great emotional excitement unrelated to sexual activity.

***Delayed ejaculation***

In delayed ejaculation, abnormal stimulation of the erect penis is needed to achieve orgasm with ejaculation. Delayed ejaculation can be considered a mild form of anorgasmia, and both conditions can be found alternately in the same patient. The causes of delayed ejaculation can be psychological or organic [e.g. incomplete spinal cord lesion, iatrogenic penile nerve damage], or pharmacological (e.g. antidepressants, antihypertensives, antipsychotics).

***Retrograde ejaculation***

Retrograde ejaculation is the total, or sometimes partial, absence of antegrade ejaculation as a result of semen passing backwards through the bladder neck into the bladder. Patients experience a normal or decreased orgasmic sensation, except in paraplegia. Partial antegrade ejaculation must not be confused with the secretion of bulbo-urethral glands. The causes of retrograde ejaculation can be divided into neurogenic, pharmacological, urethral, or bladder neck incompetence.

**Table Aetiology of retrograde ejaculation.**

<b>Neurogenic</b>	<b>Pharmacological</b>
Spinal cord injury Cauda equina lesions Multiple sclerosis Autonomic neuropathy (juvenile diabetes)	Antihypertensives $\alpha$ 1-adrenoceptor antagonists Antipsychotics Antidepressants
<b>Urethral</b>	<b>Bladder neck incompetence</b>
Ectopic ureterocele Urethral stricture Urethral valves hyperplasia Congenital dopamine $\beta$ -hydroxylase deficiency	Congenital defects/dysfunction of hemitrigon Bladder extrophy Bladder neck resection Prostatectomy

## **Diagnosis**

Diagnostic management includes the following recommended procedures.

### ***Clinical history***

The patient must be carefully checked for diabetes, neuropathy, trauma, urogenital infection, previous surgery and medication. Particular attention must be paid to the characteristics of micturition and ejaculation (presence of nocturnal emission, ejaculatory ability in given circumstances, primary or acquired disorder), as well as to psychosexual aspects (education, features of affective relationship, pre-existent psychological trauma, previous psychological therapy).

### ***Physical examination***

Genital and rectal examinations are conducted, including evaluation of the prostate, bulbo-cavernosus reflex and anal sphincter tone. Minimal neurological tests include:

- sensitivity of scrotum, testes and perineum;
- cremasteric and abdominal cutaneous reflex;
- leg osteotendinous and plantar reflexes.

### ***Post-ejaculatory urinalysis***

Post-ejaculatory urinalysis can be used to determine if there is total or partial retrograde ejaculation.



### ***Microbiological examination***

Initial, mid-stream urine, urine after prostatic massage are cultured for evidence of prostatic infection. In cases of increased leukocytes in semen, semen culture is also suggested.

### ***Optional diagnostic work-up***

This diagnostic workup can include:

- Neurophysiological tests (bulbocavernosus evoked response and dorsal nerve somatosensory evoked potentials);
- Tests for autonomic neuropathy;
- Psychosexual evaluation;
- Video-cystometry;
- Cystoscopy;
- Transrectal Ultrasonography;
- Uroflowmetry.

## 8. MATERIALS AND METHODS

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### 8.1. STUDY TYPE

Observational study

### 8.2. STUDY DESIGN

An Analytical open label, single centric study.

### 8.3. STUDY PLACE

Department of Noi naadal,  
Ayothidoss Pandithar Hospital,  
National Institute of Siddha,  
Tambaram Sanatorium, Chennai-47.

### 8.4. STUDY PERIOD

Total period	- 1yr
Recruitment for the study	- upto 10 months
Data entry analysis	- 1 month
Report preparation and submission	- 1 month

**GANNT CHART: (Study Period - 1 year)**

<b>ACTIVITIES</b> <b>(Scaled in Months)</b>	<b>1-10 th</b>	<b>11 th</b>	<b>12th</b>
<b>Recruitment for the study</b>			
<b>Data entry &amp; Analysis</b>			
<b>Report preparation&amp; Submission</b>			

**8.5 SAMPLE SIZE**

**40 Patients.**

#### **8.6. CRITERIA FOR INCLUSION:**

1. Male of Age group- 20 to 45 years
2. Married
3. Failure of his partner to conceive even after unprotected intercourse for 12 months and above
4. Willing to give semen sample for semen analysis.

#### **8.7 CRITERIA FOR EXCLUSION:**

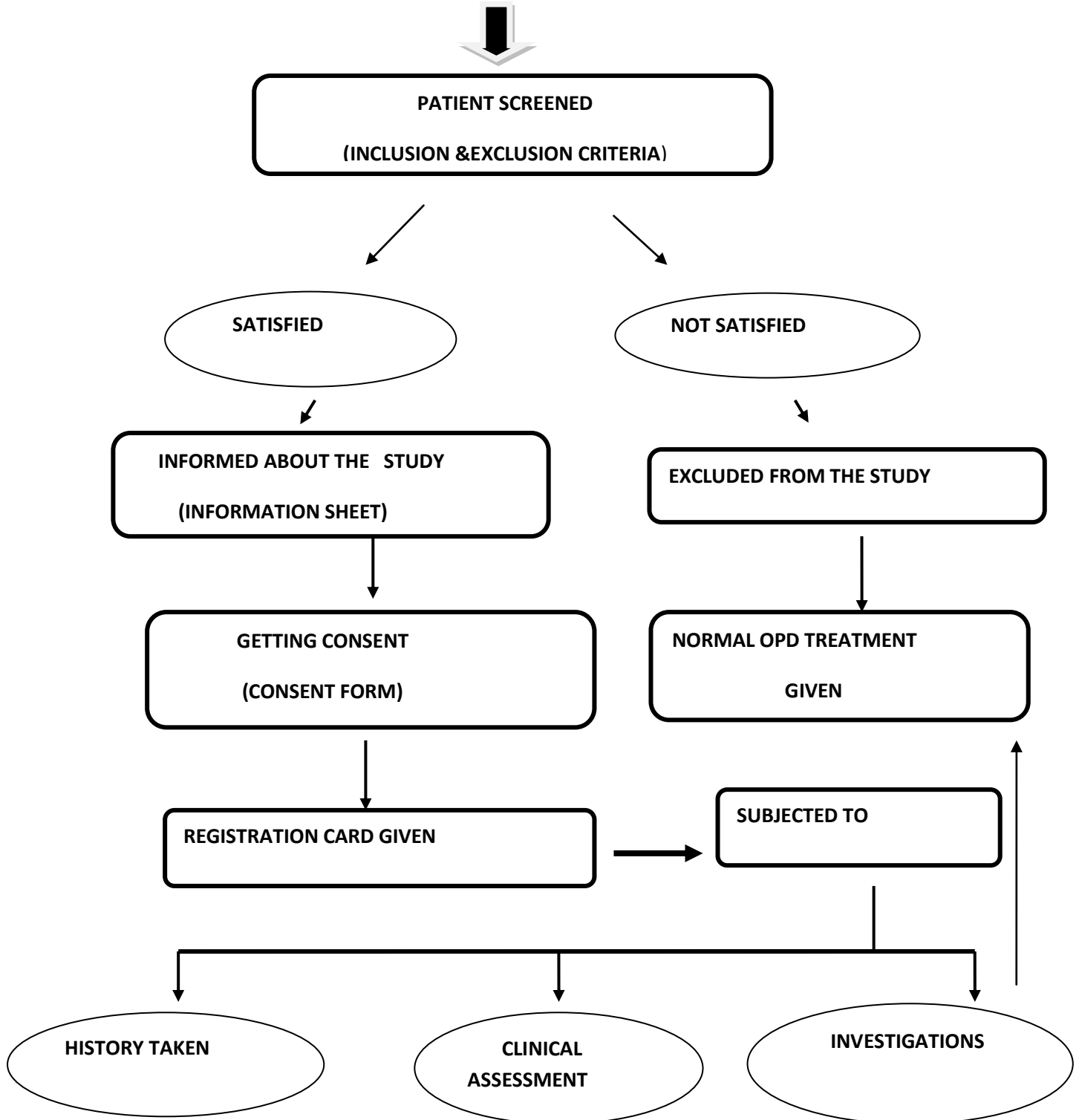
1. Genetic disorders identified by clinical features.
2. Findings of defects in the partner's conceptual ability
3. History of Miscarriage of his partner.
4. Post vasectomy.
5. Any Major systemic illness

## **8.8. STUDY ENROLLMENT**

- In the study, patients reporting at the OPD & IPD of Ayothidoss Pandithar Siddha Hospital with the clinical symptoms of “Aan maladu/Male Infertility” will be referred to the Research group. Those patients will be screened using the screening proforma (Form-I) and examined clinically for enrolling in the study based on the inclusion and exclusion criteria. Based on the inclusion criteria the patients will be included first and excluded from the study on the same day if they hit the exclusion criteria.
- The patients who are to be enrolled would be informed (Form IVa ) about the study, and the objectives of the study in the language and terms understandable for them.
- After ascertaining the patients’ willingness, a written informed consent would be obtained from them in the consent form (Form IV).
- All these patients will be given unique registration card in which patients’ Registration number of the study, Address, Phone number and Doctors phone number etc. will be given, so as to report to research group easily if any complication arises.
- Complete clinical history, complaints and duration, examination findings all would be recorded in the prescribed proforma in the history and clinical assessment forms separately. Screening Form- I will be filled up; Form Ia, Form –II and Form –III will be used for recording the patients’ history, clinical examination of symptoms and signs and lab investigations respectively.

## 8.9. METHODOLOGY

### METHODOLOGY



## 8.10. DATA COLLECTION FORMS:

Required information will be collected from each patient by using following forms.

<b>Form –I</b>	Screening and selection Proforma
<b>Form –IA</b>	History Proforma on enrollment
<b>Form II</b>	Clinical Assessment on enrollment
<b>Form –III</b>	Laboratory investigations on enrollment, during the study
<b>Form –IV</b>	Consent form (Vernacular and English versions)
<b>Form -IV- A</b>	Patient Information Sheet  (Vernacular and English versions)

## 8.11. DATA MANAGEMENT

- After enrolling the patient in the study, a separate file for each patient will be opened and all forms will be filed in the file. Study No. and Patient No. will be entered on the top of file for easy identification and arranged in a separate rack at the concerned OPD unit. Whenever study patient visits OPD during the study period, the respective patient file will be taken and necessary recordings will be made at the assessment form or other suitable form.
- The screening forms will be filed separately.
- The Data recordings will be monitored for completion and adverse event by HOD and any missed data found out during the study, will be collected from the patient, but the time related data will not be recorded retrospectively
- All collected data will be entered using MS access / excel software onto computer.
- Investigators will be trained to enter the patient data and cross checked by Senior Research Officer and HOD.

### **8.12. Statistical Analysis:**

All collected data will be entered into computer using MS access / MS excel software by the investigator. The data will be analysed using STATA software under the guidance of SRO (stat),NIS. The level of significance will be 0.05. Descriptive analysis will be made and necessary tables/graphs generated to understand the profile of the patients included in the study. Then Statistical analysis for significance of different diagnostic characteristics will be done. Student 't' test and 'chi-square' test are proposed to be performed for quantitative and qualitative data.

### **8.13.INVESTIGATIONS DURING THE STUDY:**

The patients will be subjected to basic laboratory parameters and semen analysis during the study.

### **8.14. EVALUATION OF CLINICAL PARAMETERS**

During examination, the cases were subjected to enquiry carefully which is involved history taking and examination of clinical features. The detailed history of the past and present illness, dietary habits and occupational history were also taken before considering a case for selection into this study. The patients who are fully satisfied the inclusion and exclusion criteria were enrolled to the study.

1. The seven body components (Udal thathukal)
2. Trihumoural theory (Mukkutram)
3. The eight-fold examination (Ennvagai thervu)
  - i. Naa
  - ii. Niram
  - iii. Mozhi
  - iv. Vizhi
  - v. Malam



vi. Moothiram

vii. Sparisam

viii. Naadi

4. Wrist circummetric sign (Manikadai Nool),
5. Astrology (Sothidam) of the patient would be assessed.
6. Habitat (Nilam),
7. Season (Kaalam).
8. Semen analysis in Siddha way. Looking for the Buoyancy nature of semen.

#### **MODERN PARAMETERS:**

##### **1.BLOOD**

- Hb
- ESR
- T.RBC
- TC. WBC
- DC. WBC
- Blood Sugar (fasting and post prandial)
- Urea
- Creatinine
- SGOT
- SGPT
- Serum Total Cholesterol
- HDL

- LDL
- VLDL
- Serum Triglycerides

## **2.URINE**

- Sugar Fasting and post prandial
- Albumin
- Deposits
- Pus cells
- Epithelial cells
- RBC
- Crystal

## **3. MOTION TEST**

- Ova
- Cyst
- Occult blood

## **4. SEMEN ANALYSIS**

#### **8.15. TREATMENT DURING THE STUDY:**

Normal treatment procedure followed in Department of Noi Naadal, NIS will be prescribed to the study patients and the treatment will be provided at free of cost.

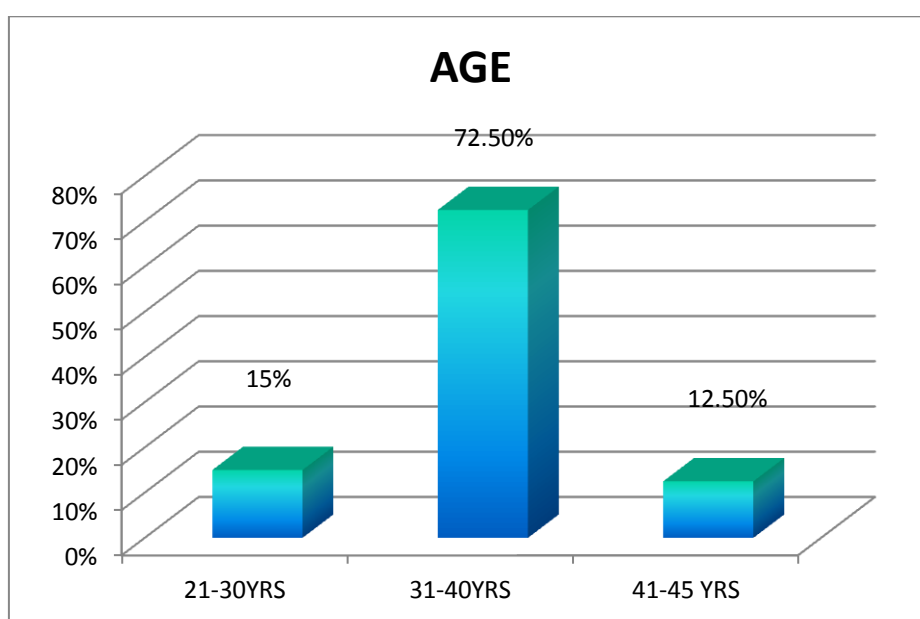
#### **8.16. ETHICAL ISSUES:**

1. Patients will be examined , screened in unbiased manner and will be subjected to the criteria
2. Informed consent will be obtained from the patient explaining in the understandable language to the patient.
3. The data collected from the patient will be kept confidentially. The patient will be informed about the diagnosis.
4. This study involves only the necessary investigations(mentioned in the protocol) and No other investigation would be done.
5. To prevent any infection, while collecting samples from the patient, only disposable syringes, disposable gloves, disposable containers with proper sterilization of lab equipments will be used
6. Patients will be subjected to semen analysis at free of cost in National Institute Of Siddha.
7. Normal treatment procedure followed in NIS will be prescribed to the study patient and the treatment will be provided at free of cost
8. There will be no infringement on the rights of patient.

## 9. OBSERVATION AND RESULT

### 9.1. AGE DISTRIBUTION OF STUDY SAMPLE

S.NO	AGE	PATIENTS IN NO	PERCENTAGE
1	21-30YRS	6	15%
2	31-40YRS	29	72.5%
3	41-45 YRS	5	12.5%
TOTAL		40	100%



### OBSERVATION

Among 40 cases, 15% came under 21-30yrs, 72.5% came under 31-40yrs and 12.5% came under 41-45yrs.

### INFERENCE:

Majority of diseased cases (79.5%) in the study were of 31-40 yrs. This age group seems to be the period of awakening to infertility to get rid of the disorder

seeking medical attention. 15% of cases came under 21-30yrs. Most of them suffered from premature ejaculation, tobacco habit which made them to defective reproductive health at comparatively early age. 12.5% of cases came under 41-45yrs revealed history of long standing treatment failure, late marriages, failure of assisted reproductive therapies which may be due to age factor of men and his partner.

## 9.2. FOOD HABITS

S.NO	FOODHABITS	PATIENTS IN NO	PATIENTS IN PERCENTAGE
1	Vegetarian	1	2.5%
2	Non-vegetarian	39	97.5%
Total		40	100%



**OBSERVATION:**

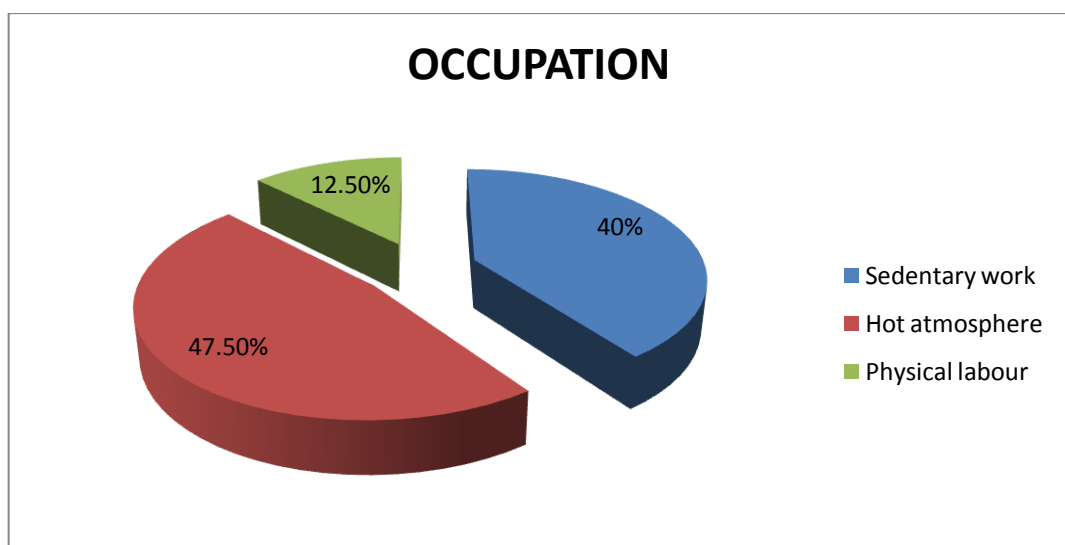
97.5% patients were non vegetarians.

**INFERENCE:**

The habit of general population is revealed in the study sample. Nonvegetarian diet which is considered as Thamo gunam food seems to alter the body's mind and soul. Thamogunam will alter reproductive ability also.

**9.3. PATIENT'S OCCUPATION**

S. NO	OCCUPATION	PATIENTS IN NO	PATIENTS IN PERCENTAGE
1	Sedentary work	16	40%
2	Hot atmosphere	19	47.5%
3	Physical labour	5	12.5%
Total		40	100%



## OBSERVATION

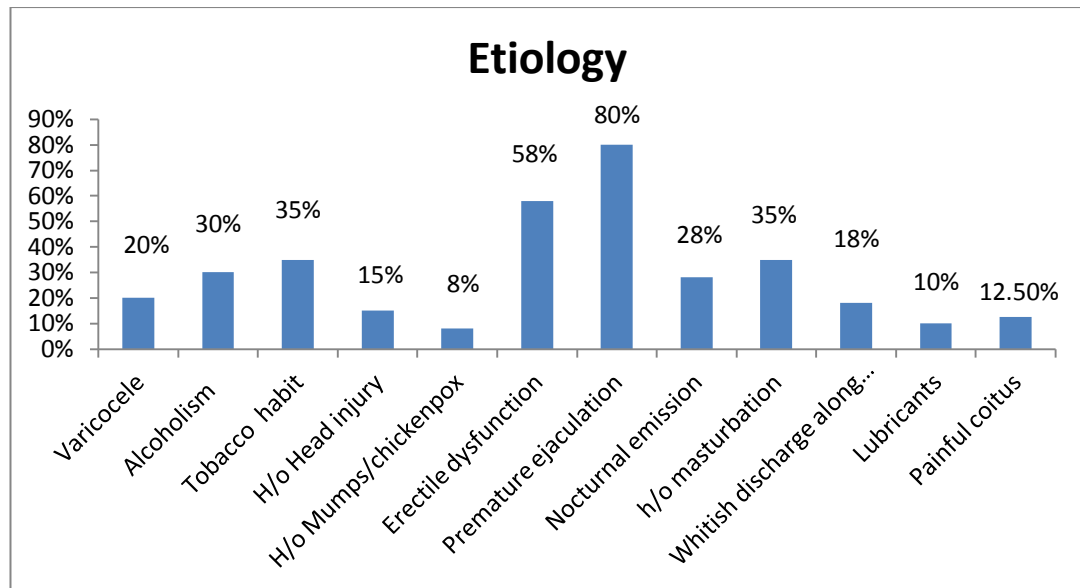
Among 40 cases, 40% of cases were sedentary job workers, 47.5% of cases were in hot atmosphere jobs, 12.5% of cases were physical laborers.

## INFERENCE

Majority of cases were working in hot atmosphere and sedentary workers. These are the suitable condition for alleviation of Pitham, which can derange along with Vatham to cause Varicocele, Premature ejaculation, reduced semen production.

### 9.4. GENERAL ETIOLOGY OF AAN MALADU:

S. NO	ETIOLOGY	PATIENTS	
		NO	%
1	Varicocele	8	20%
2	Alcoholism	12	30%
3	Tobacco habit	14	35%
4	H/o Head injury	6	15%
5	H/o Mumps/chickenpox	3	8%
6.	Erectile dysfunction	23	58%
7.	Premature ejaculation	32	80%
8.	Nocturnal emission	11	28%
9.	h/o masturbation	14	35%
10.	Whitish discharge along with urine	7	18%
11.	Lubricants	4	10%
12.	Painful coitus	5	12.5%



## OBSERVATION

80% patients had Premature ejaculation: 58% patients had Erectile dysfunction; 20% patients had varicocele; 35% had tobacco chewing habit; 8% with h/o mumps/chickenpox

## INFERENCE

In this 80% patients had premature ejaculation: 58% patients had erectile dysfunction; these two features remained a significant reproductive abnormalities

As stated in “Noi nadal noi mudhal naadal”

Vali+Azhal=Premature ejaculation+Reduced quality of semen

Vali +Iyam=Erectile dysfunction+ Altered semen quality

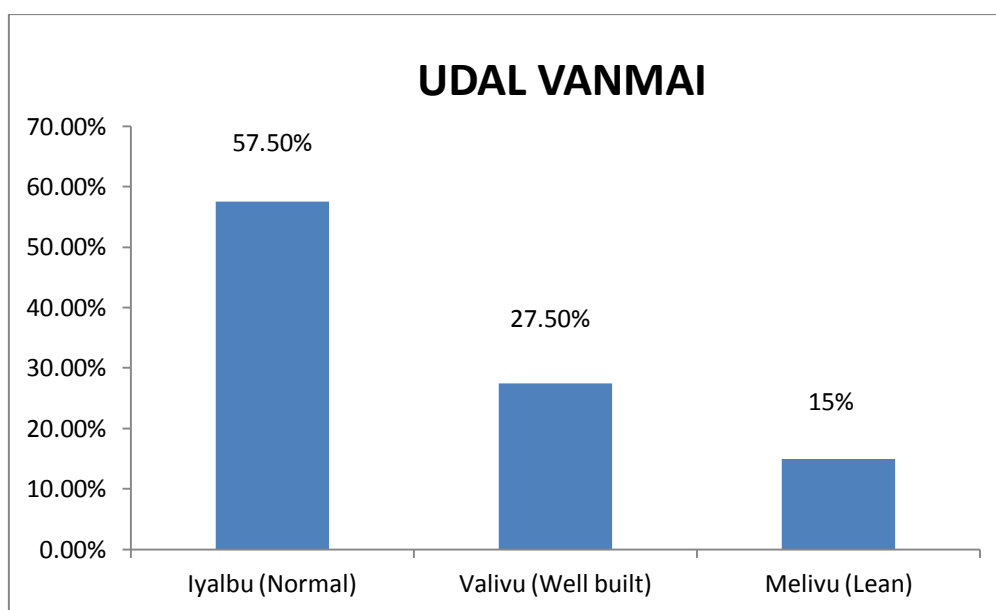
In addition habit of tobacco, alcohol reduces conceptive ability of semen.

8% of patients had h/o mumps. As stated in “Noi nadal noi mudhal naadal” karumpanisai ammai and pootuthaal ammai can lead to infertility.



## 9.5. UDAL VANMAI

S. NO	UDAL VANMAI	PATIENTS	
		NO	%
1	Iyalbu (Normal)	23	57.5%
2	Valivu (Well built)	11	27.5%
3	Melivu (Lean)	6	15%
Total		40	100%



### OBSERVATION:

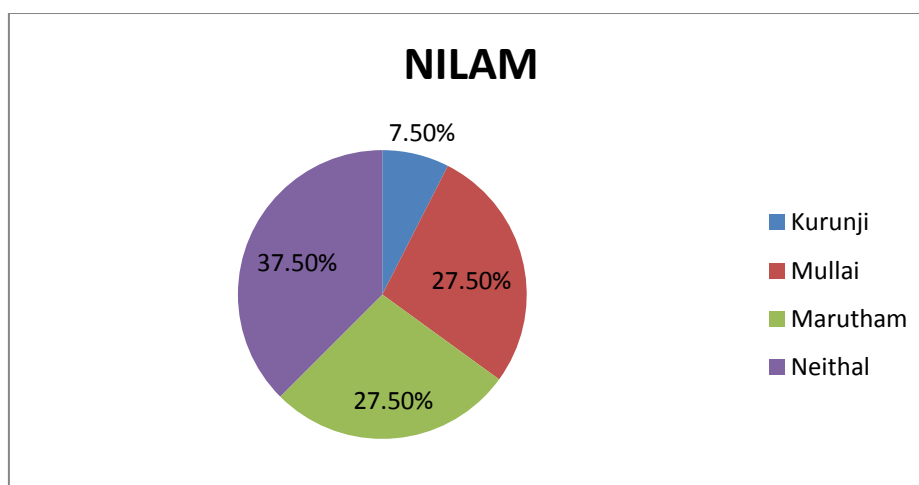
Out of 40 cases, 57.5% Of cases had iyalbu nilai, 27.5% of cases had vanmai nilai, 15% of cases had melivu nilai.

### INFERENCE:

Majority of the study patients were of Iyalbu body built.

## 9.6. NILAM

S.NO	NILAM	PATIENTS	
		NO	%
1	Kurunji	3	7.5%
2	Mullai	11	27.5%
3	Marutham	11	27.5%
4	Neithal	15	37.5%
5	Palai	0	0%
Total		40	100%



### OBSERVATION

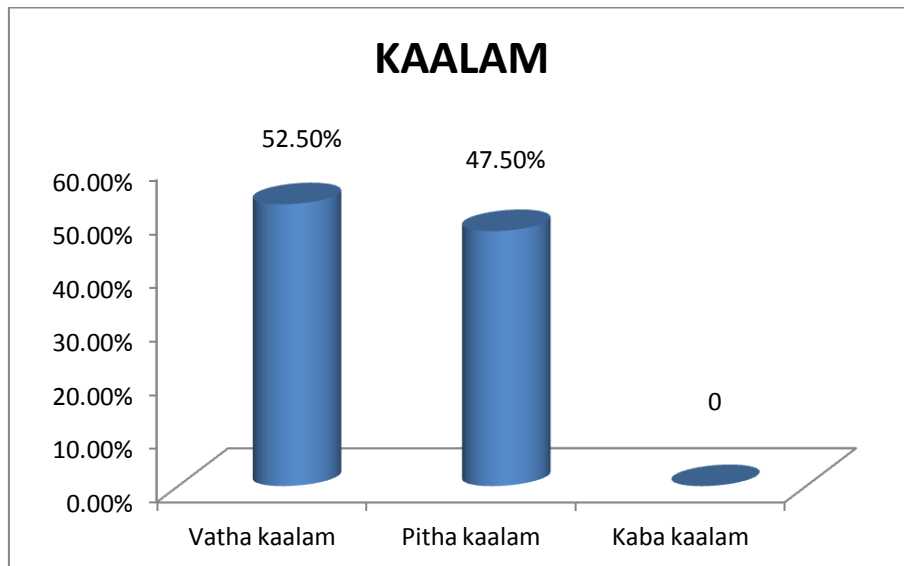
Out of 40 cases, 37.5% cases were living in Neithal nilam, 27.5% cases were living in Marutham nilam, 27.5% cases were living in Mullai nilam and 7.5% cases were living in Kurunji nilam.

### INFERENCE

Most of the cases were from Neithal region (37.5%). The study center is in Neithal nilam, observations can be ascertained only after a multi centric study.

### 9.7. KAALAM (AGE) DISTRIBUTION

S.NO	AGE	PATIENTS IN NO	PATIENTS IN PERCENTAGE
1	Vatha kaalam(1-33)	21	52.5%
2	Pitha kaalam(34-66)	19	47.5%
3	Kaba kaalam(67-100)	0	0%
Total		40	100%



### OBSERVATION

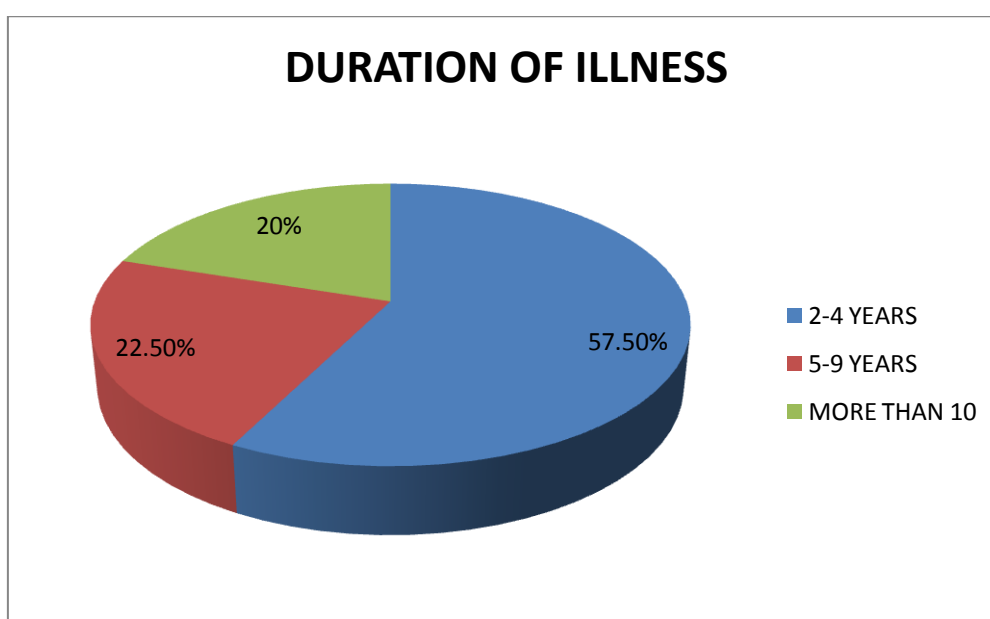
Among 40 cases, **52.5%** of cases came under vatha kaalam ie, **1-33yrs**, **47.5%** of cases came under pitha kaalam **34-66yrs..**

### INFERENCE

In the study ,majority of the patients fell in Pitha kaalam. As this is the Kaalam for a man to procreate , the difficulty ascertained also fell in this kaalam.

## 9.8. DURATION OF ILLNESS

S. NO	DURATION IN YEARS	PATIENTS	
		NO	%
1	0-1	0	0%
2	1-2	0	0%
3	2-4	23	57.5%
4	5-9	9	22.5%
5	More than 10	8	20%
TOTAL		40	100%



### OBSERVATION

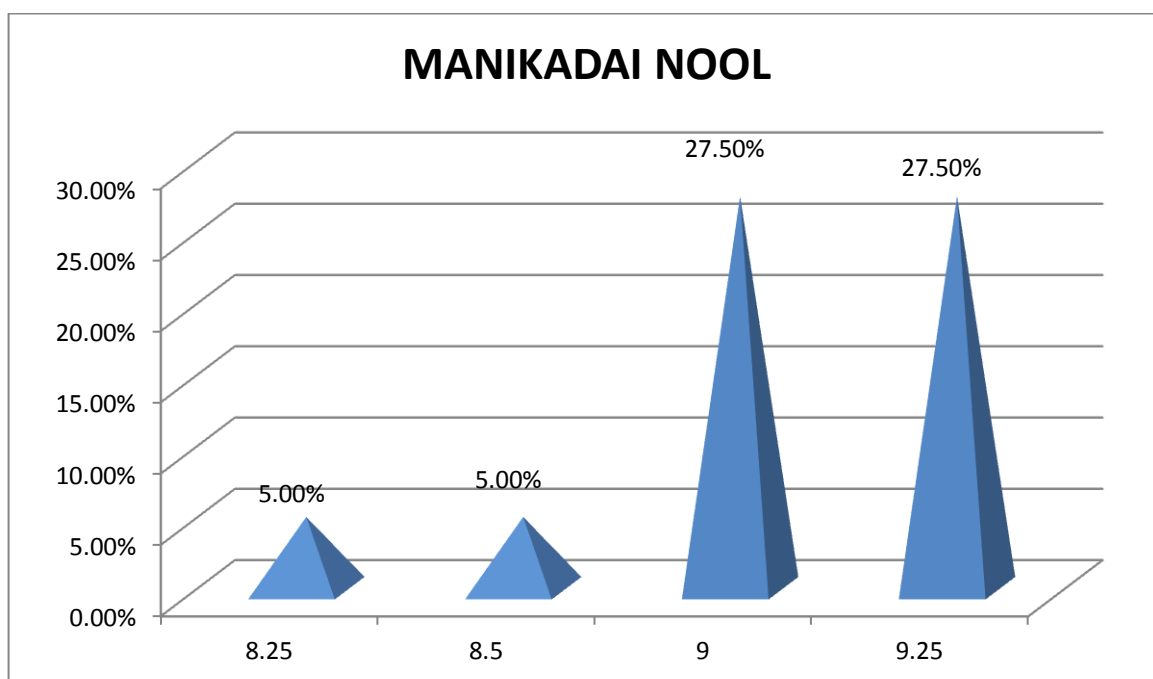
Out of 40 cases, 57.5 % of cases had the disease for 2-4 years, 22.5% of cases had the disease for 5-9 years and 20% of case had the disease for More than 10years.

### INFERENCE:

Majority of the cases suffering from this disease had duration of 2 to 4 years. 20% of case had the disease for more than 10years , revealed history of failure of assisted reproductive therapies, nil sperm count. Azoospermia and oligoasthenospermia seems to be prevalent in this 20% patients.

### 9.9. MANIKADAI NOOL (WRIST CIRCUMETRIC SIGN)

S.NO	MANIKADAI ALAVU Finger breadths)	PATIENTS NO	PATIENTS %
1	8.25	2	5.0%
2	8.5	2	5.0%
3	9	11	27.5%
4	9.25	11	27.5%
5	9.5	2	5.0%
6	9.75	3	7.5%
7	10	6	15.0%
8	10.25	2	5.0%
9	10.5	1	2.5%
	<b>Total</b>	40	100%



### OBSERVATION

Among the 40 cases, 27.5% of cases had 9.25 fbs, 27.5% of cases had 9.5 fbs, 15% of cases had 10 fbs, 7.5% of cases had 9.75 fbs, 5% of cases had 8.25 fbs, 5% of cases had 8.5fbs and 2.5% of cases had 10.5 fbs.

## INFERENCE

Majority of patients had 9.25 or 9.75 fbs. As per siddha text, Thathunattam is one of the indication for 8 and half fbs. In this study the above finding is documented in 5% of cases only.

### 9.10 YAKKAI

Yakkai	Patient no.	Percentage
Kabapitham	13	32.5%
Vathapitham	12	30.0%
Pithavatham	10	25.0%
Pithakabam	4	10.0%
Vathakabam	1	2.5%
Total	40	100%

## OBSERVATION

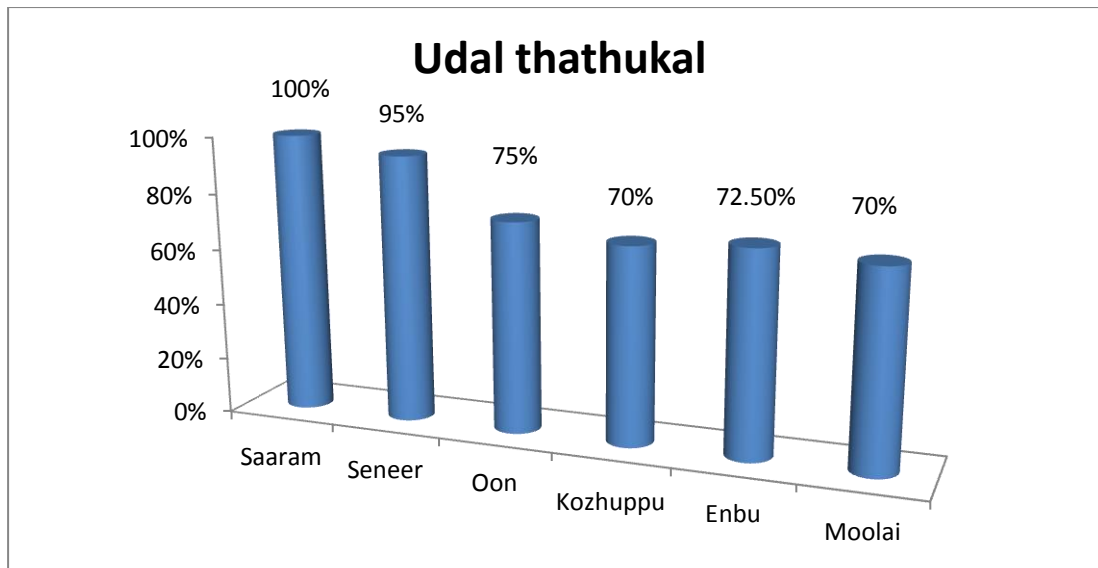
Most of the patients were of VathaPitham body type(30.0%) and KabaPitham body type(32.5.0%)

## INFERENCE

As per siddha text Kabam udal are prone to Reduced capacity to procreate and Pitham udal are prone to oligospermia. This is revealed in the study as the most of patients were of KabaPitham body type(32.5%).

### 9.11. UDAL THATHUKKAL

S.NO	UDAL THATHUKKAL	PATIENTS	
		No	%
1	Saaram	40	100.0%
2	Senneer	38	95.0%
3	Oon	30	75.0%
4	Koluppu	28	70.0%
5	Enbu	29	72.5%
6	Moolai	28	70.0%
7	Sukkilam	40	100.0%



### **OBSERVATION**

Out of 40 cases, all the cases had deranged saaram and sukkilam. 95% cases had deranged senneer, 75% cases had deranged oon, 72.5% cases had deranged enbu, 70% cases had deranged moolai, 70% cases had deranged koluppu.

### **INFERENCE**

All the cases have affected sukkilam and saaram. Majority of cases more than 70% had all thathukkal affected

### **ACCORDING TO THERAIYAR**

Food nourishes saaram(essence) on the first day

It then nourishes blood on the second day

It then nourishes muscles on the third day

It then nourishes adipose tissue on the fourth day

It then nourishes bone on the fifth day

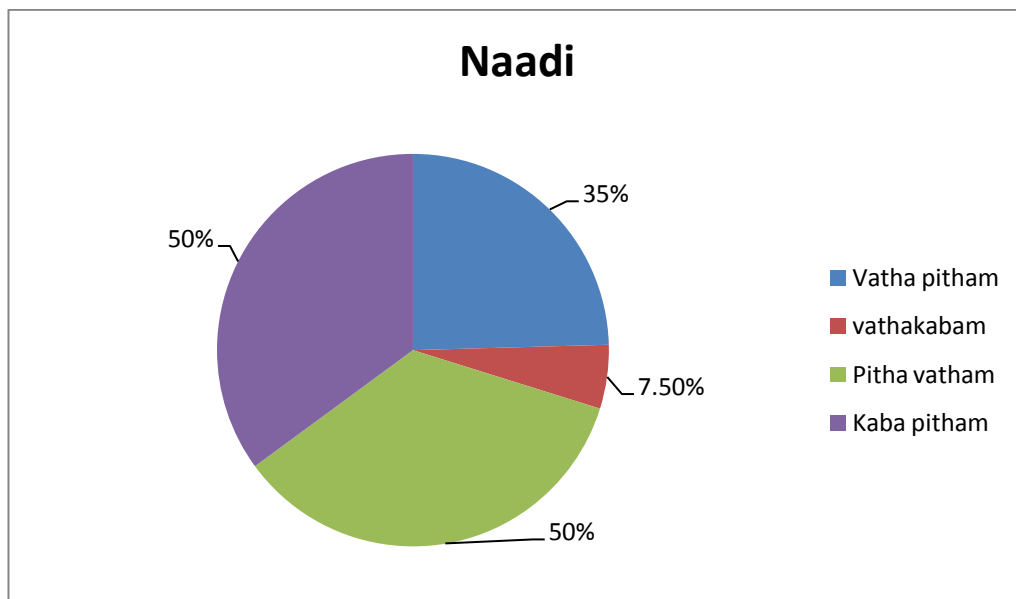
It then nourishes bone marrow on the sixth day

It then nourishes semen on the seventh day

As the interruption in chain can affect the production of semen, Majority of Aan maladu patients in the study more than 70% had all thathukkal affected.

### 9.12. NAADI (PULSE)

NAADI		PATIENTS	
		NO	%
Naadi nithanam (Pulse appraisal)	Vanmai	33	82.5
	Menmai	7	17.5
	Total	40	100
Naadi Panbu (Pulse character)	Kuthithal in vatham (Jumping)	1	2.5%
	Suzhalal in vatham (Revolving)	2	5.0%
	Thullal in vatham (Frisking)	12	30.0%
	Kuthithal in pitham (Jumping)	1	2.5%
	Suzhalal in pitham (Revolving)	13	32.5%
	Thullal in pitham (Frisking)	11	27.5%
	Total	40	100.0%
Pulse play (naadi nadai)	Vatha pitham	14	35%
	vathakabam	3	7.5%
	Pitha vatham	20	50%
	Kaba pitham	3	7.5%
	Total	40	100%





## **OBSERVATION**

Out of 40 patients 30.0% had Thullal in vatham , 32.5% had Suzhalal in Pitham, 27.5% had Thullal in Pitham, 5.0% had Suzhalal in vatham, 2.5% had Kuthithal in vatham 2.5% had Kuthithal in Pitham.

50% of patients had Pitha vatham, 35% had Vatha pitham, 7.5% had vathakabam, 7.5% had Kaba pitham

## **INFERENCE:**

From the pulse study it is inferred that majority of cases 50% had Pithavatham. 35% had Vatha pitham.

As per sathaga naadi and agathiyar, Male infertility related pulse appraisal were

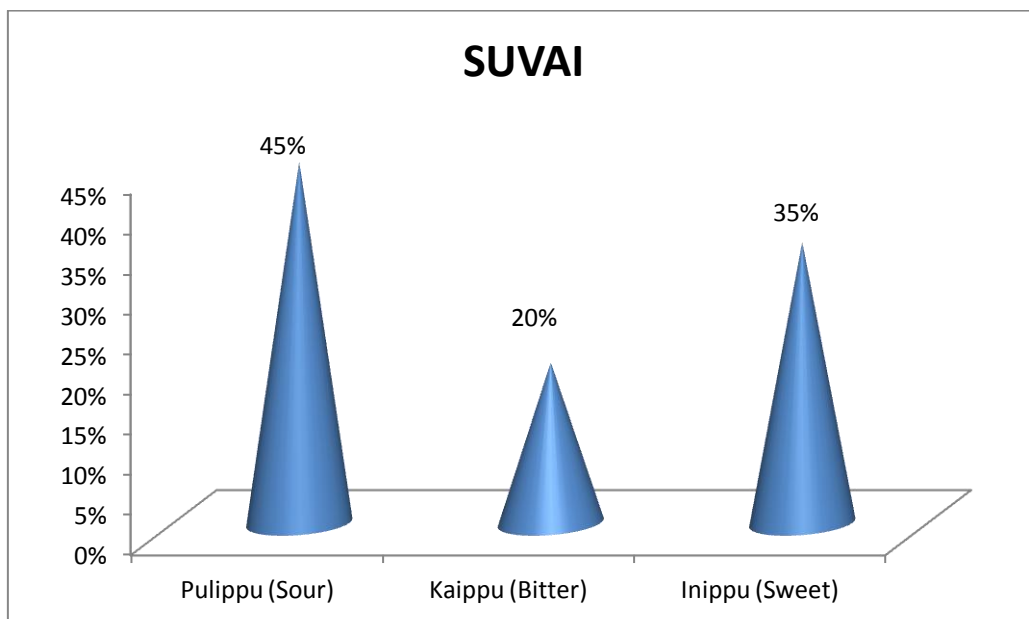
- Pithavatha Naadi
- Vatha Pitha Naadi
- Pithathil vayu Naadi
- Vatha Naadi

As given in the text majority of aan maladu patients had Pithavatham and vathaPitham naadi. In addition the different pulsations in Vatham and Pitham like suzhalal, thullal, kuthithal reveals that either of this humour stood as primary reason . In the study 62.5% of patients had different pulsations in Pitham like suzhalal, thullal, kuthithal, which reveals that according to naadi, Pitha humour stood as primary reason for 62.5%

In the study 37.5% of patients had different pulsations in vatham like suzhalal, thullal, kuthithal, which reveals that according to naadi, vatham humour stood as primary reason for 37.5% .

### 9.13. NAA

NAA		PATIENTS	
		NO	%
Thanmai (Appearance)	Maapadinthiruthal	2	5%
	Veddippu	2	5%
	Normal	36	90%
	Total	40	100%
Niram (Colour)	Normal	30	75%
	Manjal	0	0%
	Velluppu	10	25%
	Total	40	100%
Suvai (Taste)	Pulippu (Sour)	18	45%
	Kaippu (Bitter)	8	20%
	Inippu (Sweet)	14	35%
	Total	40	100%
Vainer oorai (salivation)	Normal	25	62.5%
	Increased	2	5%
	Decreased	13	32.5%
	Total	40	100%



## OBSERVATION

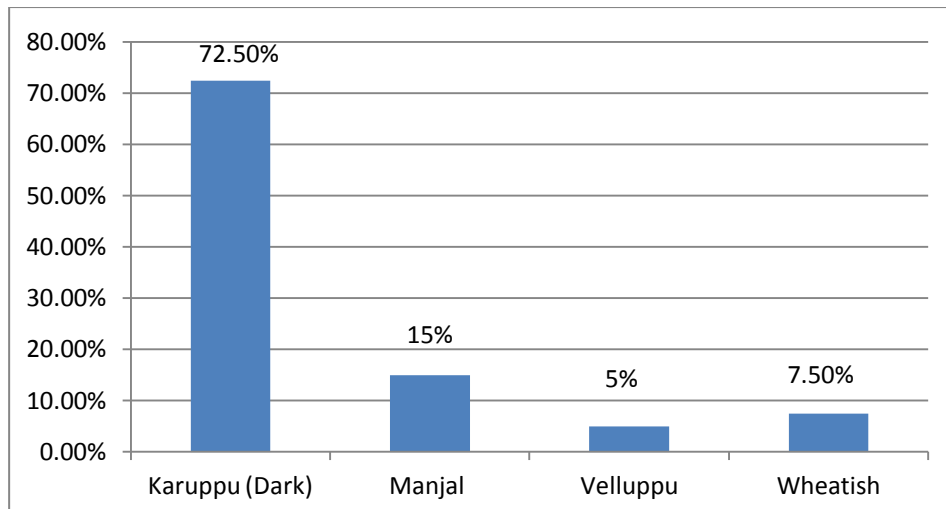
45% had increased desire to sour, 35% had had increased desire to sweet, 20% had increased desire to bitter.

## INFERENCE

As per siddha text increased sour taste desire occurs due to vatha derangement. As per tongue examination, 45% had Vatha derangement. Vatha derangement seems to be predominant than other humours

### 9.14. NIRAM, MOZHI, MEIKURI

NAME OF THE PARAMETER	THANMAI (CHARACTER)		PATIENTS	
			NO	%
Niram (complexion)	Karuppu (Dark)		29	72.5%
	Manjal		6	15%
	Velluppu		2	5%
	Wheatish		3	7.5%
	Total		40	100%
Mozhi (voice)	Samaoli(Normal pitch)		29	72.5%
	Urathaoli (High Pitch)		7	17.5%
	Thazhntha oli(low pitched)		4	10%
	Total		40	100%
Meikkuri	Veppam (Warmth)	Mitha veppam	26	65%
		Migu veppam	12	30%
		Thatpam	2	5%
		Total	40	100%
	Viyarvai (Sweating)	Normal	33	82.5%
		Increased	7	17.5%
		Total	40	100%
	Thodu vali (Tenderness)	Absent	35	93.5%
		Present	5	6.5%
		Total	30	100%



### UDAL NIRAM

#### OBSERVATION

In Nirakuri the study reveals 72.5 % of patients were dark, 15 % were yellowish, 7.5% were Wheatish.

In Mozhikuri, in the study 72.5 % of patients were normal pitched, 17.5 % were high pitched, 10% were low pitched.

In Meikuri, in the study 65 % of patients were mithaveppam , 30 % were Miguveppam , 5% were Thatpam.

#### INFERENCE:

As per Niram Vatham seems to be prevalent in the study sample .

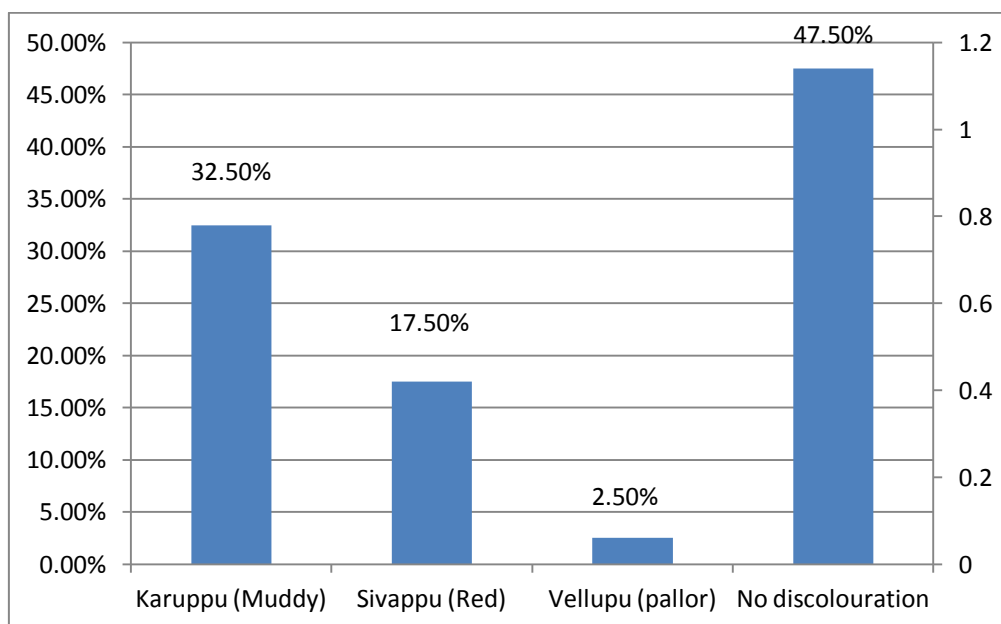
As per Mozhi, Vatham seems to be prevalent in the study sample. Pitham stands next to vatham.

As per Meikuri Vatham seems to be prevalent in the study sample. Pitham stands next to Vatham.

### 9.15.VIZHI (EYE)

NAME OF THE PARAMETER		THANMAI (CHARACTER)	PATIENTS	
			NO	%
VIZHI	NIRAM	Karuppu (Muddy)	13	32.5%
		Manjal (Yellow)	0	0%
		Sivappu (Red)	7	17.5%
		Vellupu (pallor)	1	2.5%
		No discolouration	19	47.5%
		Total	40	100%
	THANMAI	Peelai serthal only	4	10%
		Increased kanner only	0	0%
		Erichal only	0	0%
		Peelai serthal	0	0%
		Erichal	17	42.5%
		Normal	29	47.5%
		Total	40	100%

### VIZHI



## OBSERVATION

32.5% had muddy discolouration in eyes, 17.5% had reddish discolouration in eyes. 2.5% had pallor in eyes, 47.5% had no discolouration in eyes. 42.5% had burning sensation in eyes.

## INFERENCE:

Burning sensation in eyes near half of the study group is due to Pitha humour derangement. 32.5% had muddy discolouration in eyes due to vatha derangement. Through eye examination either Pitha or vatham seems to get deranged in a reasonable group of patients.

### 9.16. MALAM

MALAM		PATIENTS	
		NO	%
Thanmai	Sikkal (constipation)	8	20
	Siruthal (scanty of stools)	2	5
	Seetham (mucoid stools)	0	0
	Kalichal(diarrhoea)	0	0
	Vemmai (warmth)	5	12.5
	Normal	25	62.5
	Total	40	100
Niram (Colour)	Karuppu (Dark)	6	15
	Manjal (normal)	33	82.5
	Vellupu (Pallor)	1	2.5
	Total	40	100

## OBSERVATION.

62.5% of patients were without any malam disturbances. 82.5% of patients had normal stool colour. 20% of patients had constipation.

## INFERENCE

20% of patients had constipation. Vatha derangement may be the cause for infertility for these group as per malakuri. No other specific inference could be made.

### 9.17. NEERKKURI

S NO	NEERKURI	NATUREOF URINE	PATIENTS	
			NO	%
1	Niram	Paleyellow (ilamanjalniram)	30	75%
		Dark yellow	1	2.5%
		Colourless	9	22.5%
		Total	40	100%
2	Manam (Smell)	Mild aromatic	26	65
		Bad odour	6	15
		Ammoniacal	8	20
3	Nurai (Frothy)	Absent	21	52.5
		Present	19	47.5
		Total	40	
4	Edai(Density)	Normal	28	70.0%
		Increased	12	30.0%
5	Alavu	Normal	35	87.5%
		Polyuria	0	0
		Oliguria	5	12.5%
		Total	40	100
6	Enjal (Deposit)	Present	22	57.5%
		Absent	18	42.5%
		Total	40	100

## **OBSERVATION**

47.5 % had frothy urine. 75% had normal pale yellow colour.

## **INFERENCE:**

47.5 % had frothy urine. According to Yugimuni, Frothy urine is one of the feature of Aan maladu, which revealed in the study in near the half of patients. As per Siddha text, frothiness in urine is due to Kabam derangement.

## **Neikkuri**

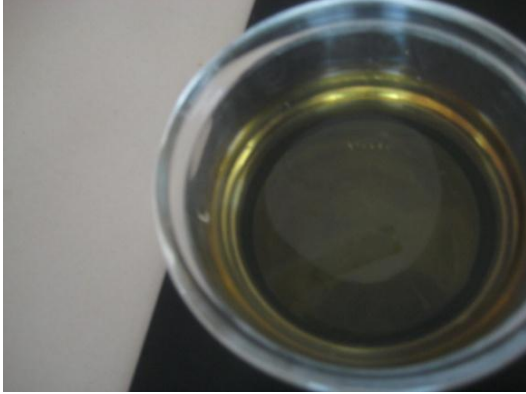
S.No	FEATURES OF OIL-ON-URINE SIGN	PATIENTS NO	PATIENTS %
1	Cylindrical	1	2.5%
2	Egg	3	7.5%
3	Full of Sieve	5	12.5%
4	Bird	2	5.0%
5	Elliptical	2	5.0%
6	Hat	1	2.5%
7	Coin	16	40.0%
8	Snake	1	2.5%
9	Pearl	2	5.0%
10	Elephant	1	2.5%
11	Weapon	1	2.5%
12	Seed	1	2.5%
13	Heart	1	2.5%
14	Instrument	1	2.5%
15	Mountain	2	5.0%



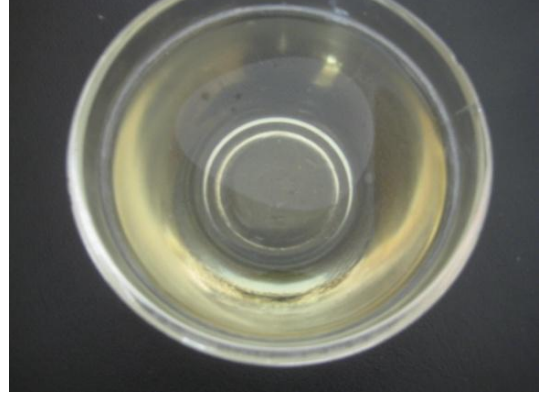
<b>S.No</b>	<b>Spreading nature of Nei</b>	<b>Patients No</b>	<b>Patients %</b>
1	Slow spreading	36	90.0%
2	Fast spreading	3	7.5%
3	No spreading	1	2.5%
	total		100

<b>S.No</b>	<b>Sieving nature (Salladai kan)</b>	<b>Patients No</b>	<b>Patients %</b>
1	Present	5	12.5%
2	Absent	35	87.5.0%
	Total	40	100%

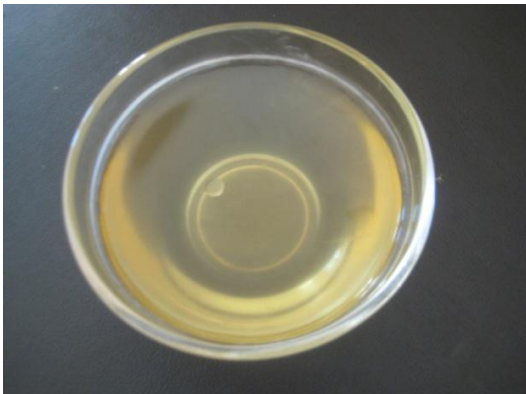
## NEIKKURI PATTERNS OF AAN MALADU PATIENTS



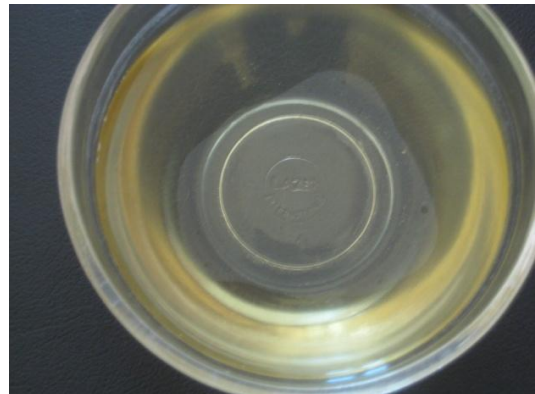
**C77602 MOUNTAIN**



**C34913-EGG**



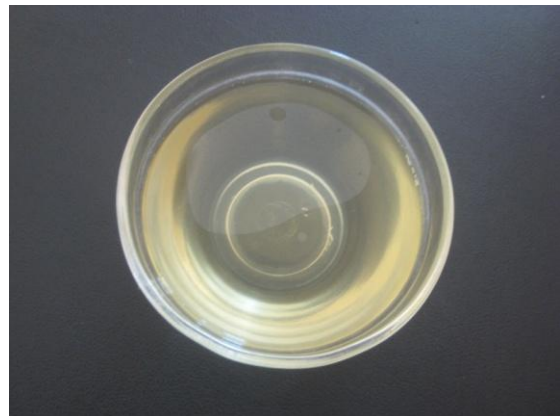
**C52180 PEARL**



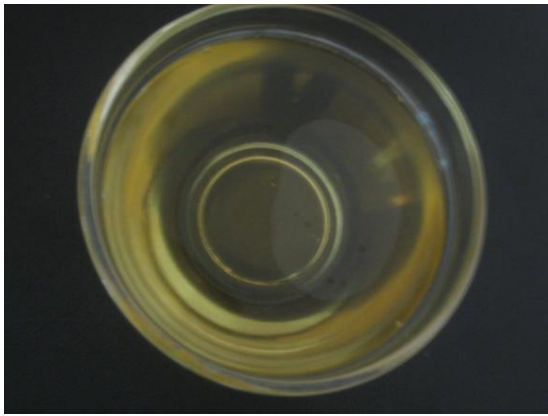
**C92688 MOUNTAIN**



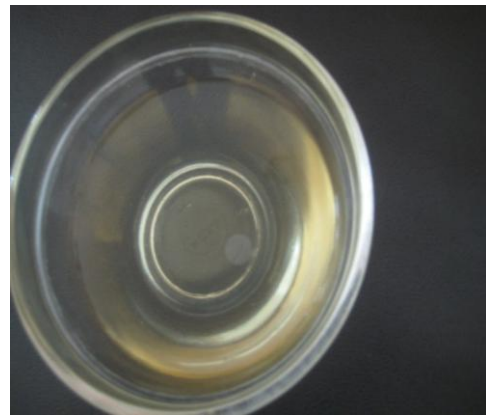
**C77762 COIN**



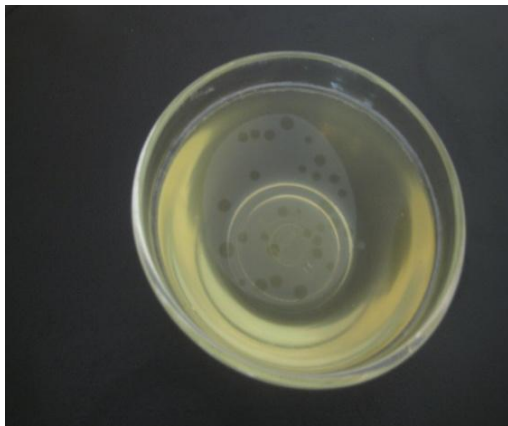
**D312 CYLINDER**



**C84379-EGG**



**C91215-COIN**



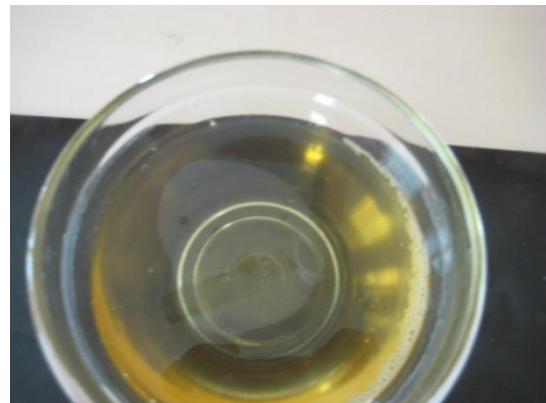
**5058 -SALLADAI**



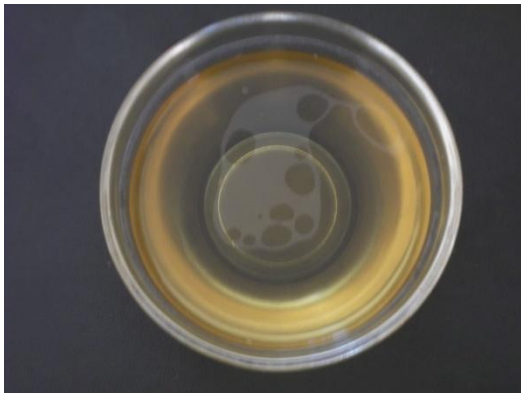
**D7416-SALLADAI**



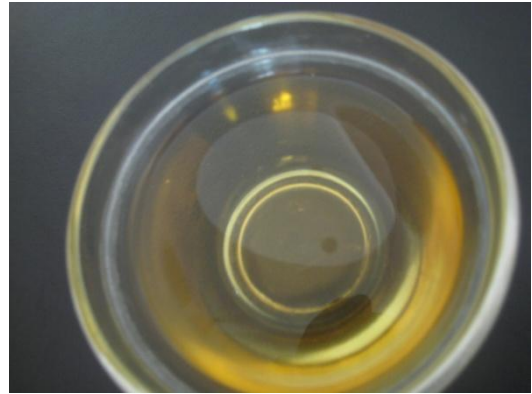
**C95198 -ELEPHANT**



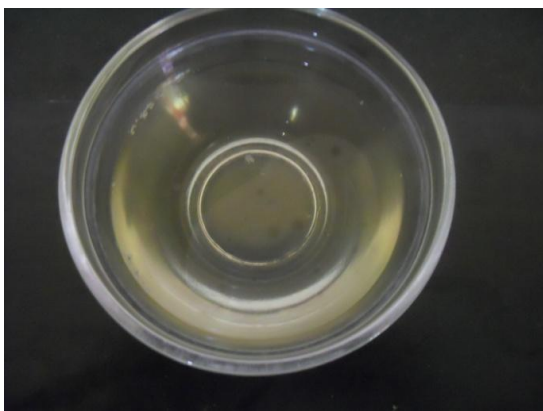
**C87375-HAT**



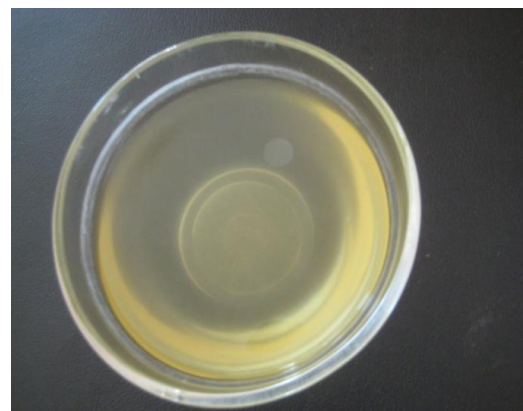
**C61345 -BIRD**



**C84687-ELLIPSOID**



**C75622-ELLIPSOID**



**C99784-PEARL**



**C91615 -COIN**



**C89337-COIN**





**C98180 -COIN**



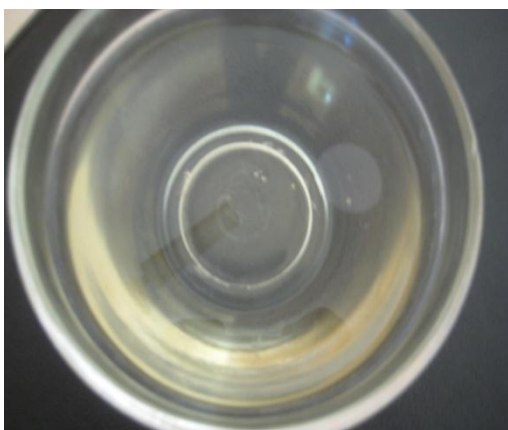
**C99468-COIN**



**C78483-COIN**



**C88622-COIN**



**C91837 -COIN**



**C88932-COIN**



**C99220 -SALLADAI**



**C80751-BIRD**



**C58396 -WEAPON**



**C99531-SNAKE**



**C90733 -COIN**



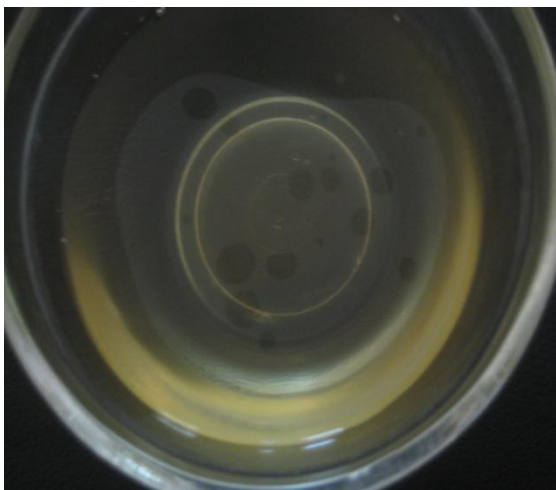
**C97431-COIN**



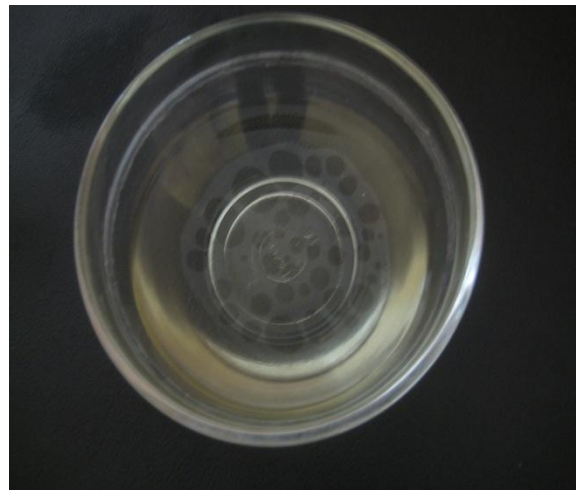
**D346 -COIN**



**C98931-SEED**



**C97354-HEART**



**C90111-SALLADAI**

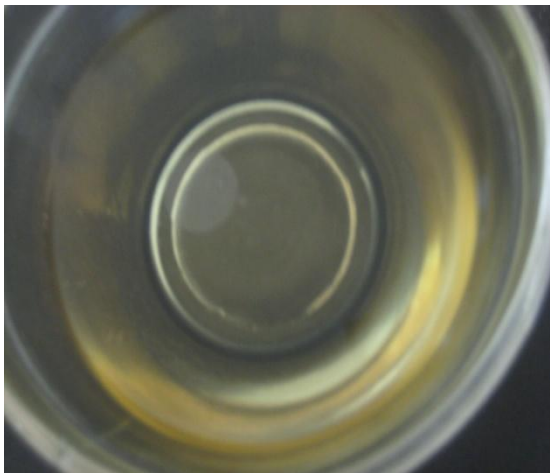


**C96616 -COIN**

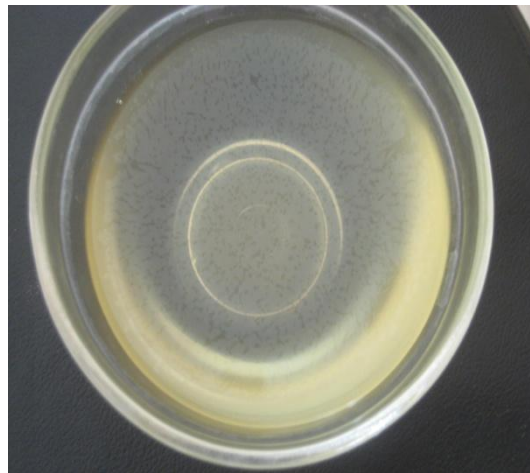


**A71658-COIN**





**C36372 -COIN**



**D2510-SALLADAI KAN**

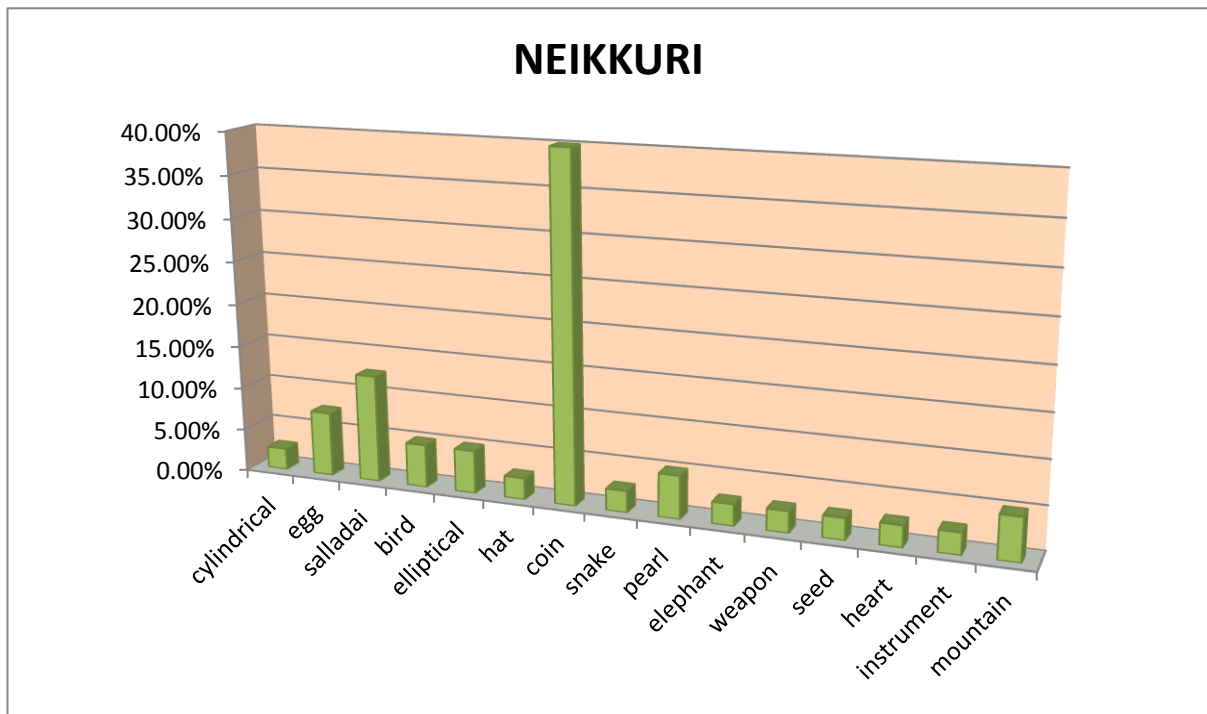


**C79763 -INSRTUMENT**



**C92970-EGG**





## OBSERVATION

Coin shape appeared in 40.0%. Next to that, Salladaikan appeared in 12.5 %. 90% of patients had slow spreading Neikkuri. 7.5% had fast spreading nature. 2.5 % had no spreading Neikkuri.

## INFERENCE

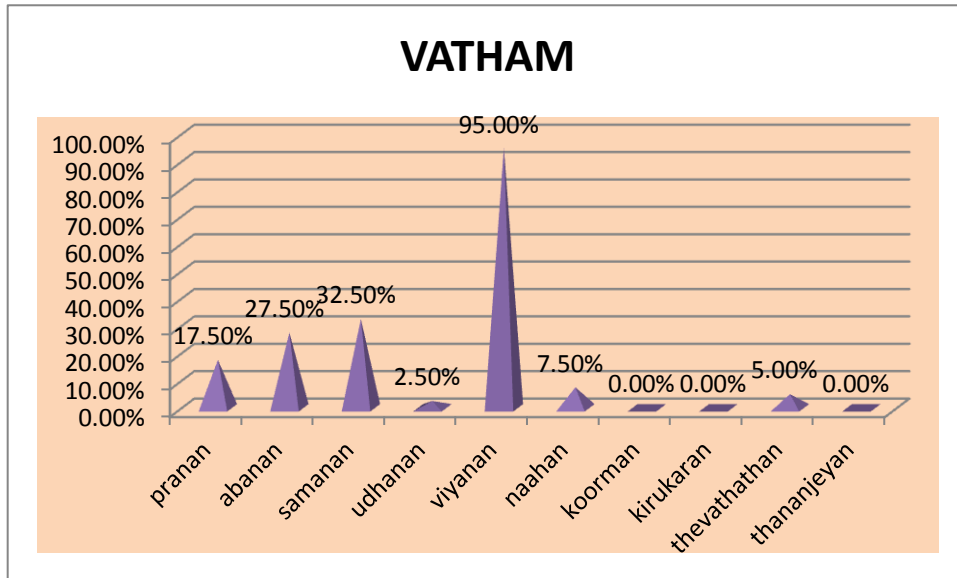
90% of patients are curable. 7.5% are hardly curable. 2.5% are incurable. 12.5% of neikuri, with salladaikan can be considered as having Kabam derangement according to Sage Theraiyar.

### 9.18. DERANGED VALI

S.NO	VATHAM	PATIENTS	
		NO	%
1	Pranan	7	17.5%
2	Abanan	11	27.5%
3	Samanan	13	32.5%
4	Udhanan	1	2.5%
5	Viyanan	38	95.0%
6	Naahan	3	7.5%
7	Koorman	0	0.0%
8	Kirukaran	0	0.0%
9	Thevathathan	2	5.0%
10	Thananjeyan	0	0.0%
	Total	40	100%

### OBSERVATION

Out of 40 cases, in 95.0% of patients Viyanan get affected. 27.5 % had affected Abanan, 32.5 % had affected Samanan, 17.5% had affected Pranan, 7.5 % had affected naahan, 5% had affected Thevathathan.



## INFERENCE

Vatham seems to be deranged in almost all patients. As per siddha text,

- Vatham on derangement causes weakness to body parts. In male infertility the weakness of a genital (erectile dysfunction and ejaculatory defects) is due to vatha derangement.
- Abaan, one of the Vatham is responsible for governing ejaculatory function.

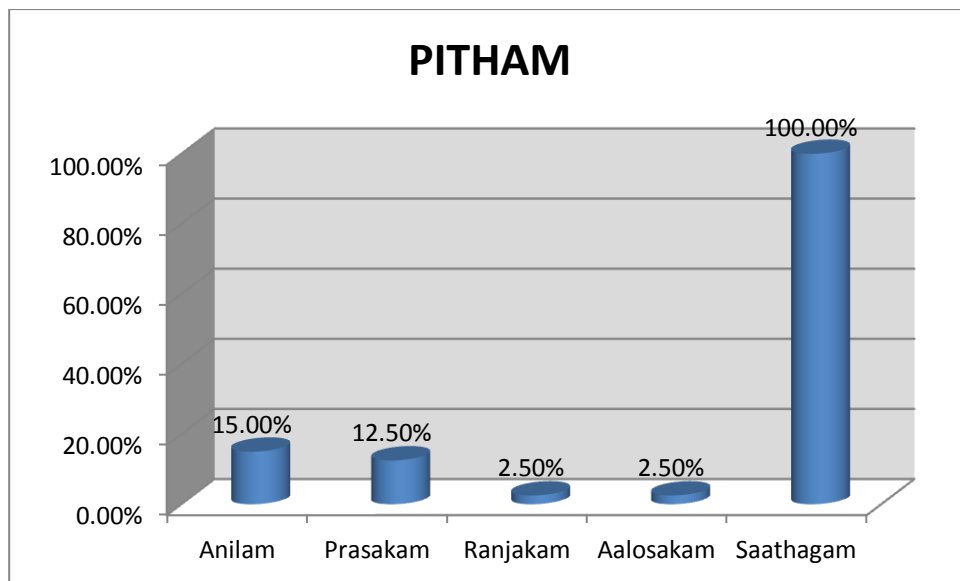
In Aan maladu, primarily affected Vayukkal are, Piraanan, Abanan, Vyanan, Samanan, Thevadhathan.

S.no	Types of vaatham	Derangements
1.	Piraanan	Abnormal semen
2.	Abanan	Ejaculatory defect
3.	Viyaanan	Erectile dysfunction
4.	Samanan	Abanan gets affected.
6.	Dhevadhathan	Genital abnormalities

These things were well revealed in this study.

### 9.19. DERANGED AZHAL

S. NO	PITHAM	PATIENTS	
		NO	%
1	Anilam	6	15.0%
2	Prasakam	5	12.5%
3	Ranjakam	1	2.5%
4	Aalosakam	1	2.5%
5	Saathagam	40	100.0%



### OBSERVATION

Out of 40 cases, 15% had deranged Analam, 12.5% of cases had deranged Prasagam, 2.5% had deranged Ranjagam, 2.5% of cases had deranged Aalosagam, 100% of cases had deranged Saadhagam..

### INFERENCE

Saadhagam is affected in all patients which make the disease condition more worser as it can alleviate other Pitham components. According to Siddha

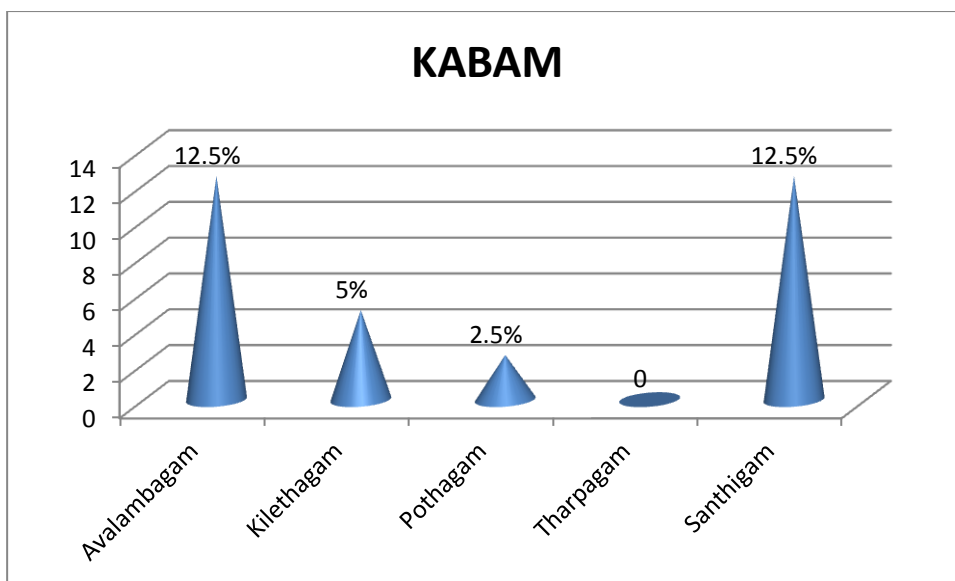
maruthuvanga surukkam, Derangement due to addition of heat with Pitha characters, will result in disorder in Pitham residing places and other homoural places.e.g.Varicocele in Vatha place due to Pitha alleviation.

In aan maladu, primarily affected Pitham component is

- Saathaga Pitham
- Anila Pitham
- 

#### 9.20. DERANGED IYYAM

KAPHAM	PATIENTS	
	NO	%
Avalambagam	5	12.5%
Kilethagam	2	5%
Pothagam	1	2.5%
Tharpagam	0	0%
Santhigam	5	12.5%



### OBSERVATION

Out of 40 cases, 12.5% of the cases had deranged Avalambagam, 12.5% of the cases had deranged Santhigam, 5% of the cases had deranged Kilethagam, 2.5% of the cases had deranged Pothagam

### INFERENCE

In the study, Kabam derangement seemed to be comparatively lesser than Vali and Azhal.

### 9.21. ASTROLOGY

s.no	RASI	PATIENT NO.	PERCENTAGE
1	Magaram	1	2.5%
2	Thulam	2	5.0%
3	Simmam	3	7.5%
4	Rishabam	7	17.5%
5	Midhunam	7	17.5%
6	Kanni	8	20.0%
7	Meenam	1	2.5%
8	Mesam	1	2.5%
9	Kumbam	3	7.5%
10	Viruchigam	2	5.0%
11	Dhanusu	2	5.0%
12	Unknown	3	7.5%

## **OBSERVATION**

20 % of patients were of Kanni rasi. 17.5 % of patients were of Rishabam, 17.5 % of patients were of Midhunam.

## **INFERENCE**

Majority of patients were of either Kanni or Rishabam or Midhunam raasi

## **NATCHATHIRAM:**

<b>S.no</b>	<b>Natchathram</b>	<b>Patients no</b>	<b>Patients percentage</b>
1	Unknown	15	38%
2	Known	25	62%

## **PERCENTAGE AMONG NATCHATHRAM KNOWN POPULATION**

<b>S.no</b>	<b>Natchathram</b>	<b>Patients no</b>	<b>Patients percentage</b>	<b>Percentage among known population</b>
1	Thiruvonam	2	5%	8%
2	Visakam	2	5%	8%
3	Uthiram	3	8%	12%
4	Karthikai	1	3%	4%
5	Astham	3	8%	12%
6	Rohini	1	3%	4%
7	Swathy	1	3%	4%
8	Mirugaseeridam	2	5%	8%
9	Thiruvathirai	4	10%	16%
10	Revathy	1	3%	4%
11	Astham	1	3%	4%
12	Pooratathi	1	3%	4%
13	Pooradam	1	3%	4%
14	Sathiyam	1	3%	4%
15	Punarpoosam	1	3%	4%

## OBSERVATION

62% of patients were aware of their Natchathiram. Out of which 16% were Thiruvathirai, 12% were Astham, 12% were Uthiram.

## INFERENCE

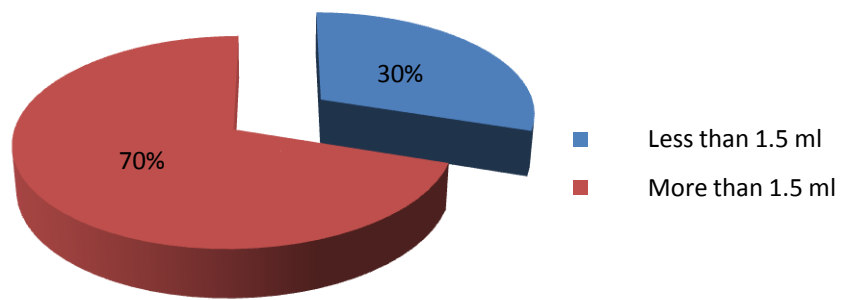
Comparing to other Natchathiram, Thiruvathirai, Astham and Uthiram seemed to be likely to affect with Aanmaladu.

### 9.22. Semen analysis

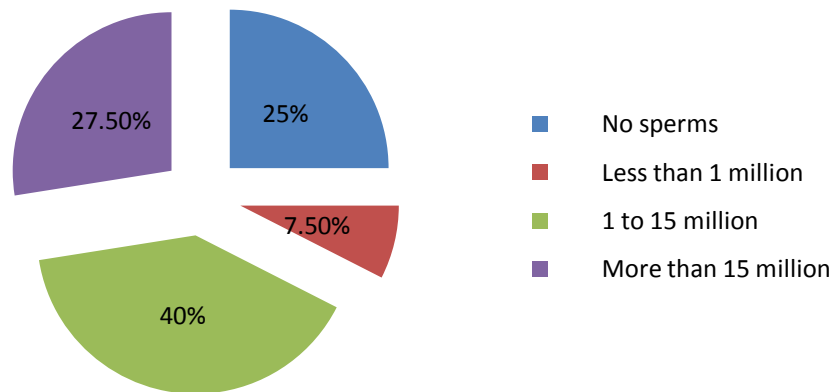
Parameters	Patients no.	Patients %
<b>Volume</b>		
Less than 1.5 ml	12	30%
More than 1.5 ml	28	70%
<b>Concentration</b>		
No sperms	10	25%
Less than 1 million	3	7.5%
1 to 15 million	16	40%
More than 15 million	11	27.5%
<b>Motility</b>		
Total motility		
More than 40%	22	55%
Less than 40%	18	45%
Immotile		
More than 60%	15	37.5%
<b>Morphology</b>		
Normal	30	75%



## SEMEN VOLUME

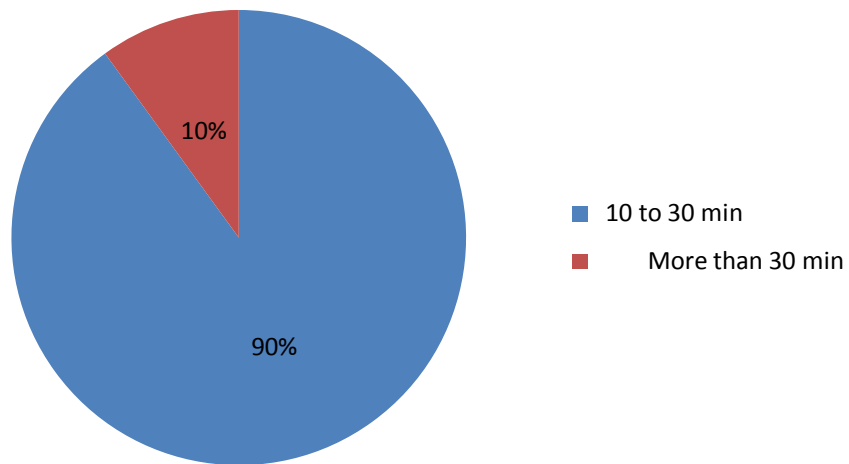


## SPERM COUNT

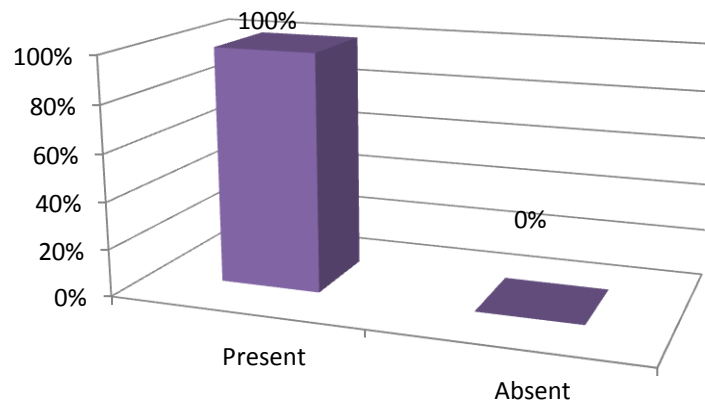


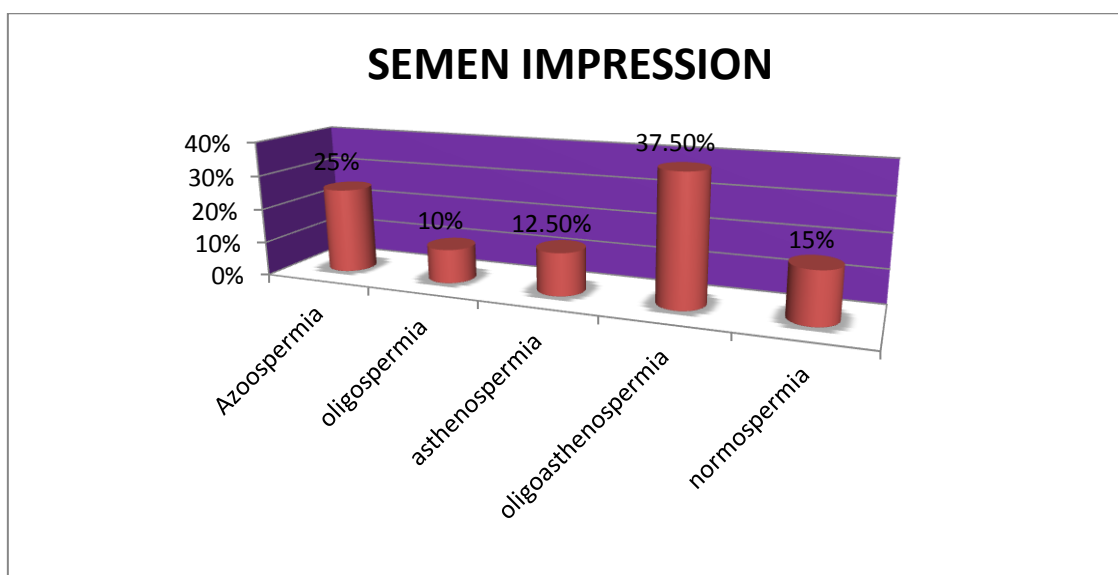
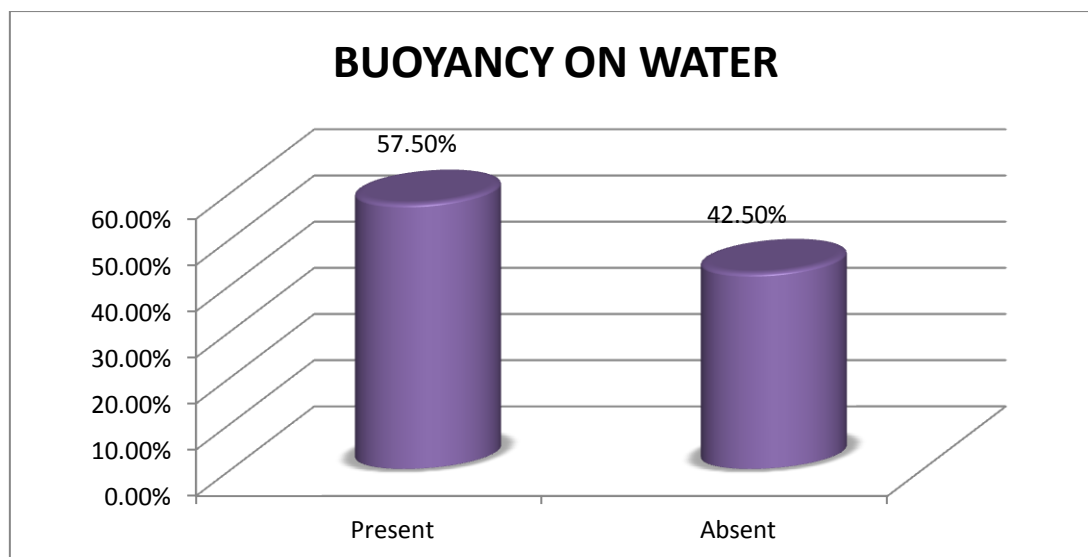
Parameters	Patients no.	Patients %
<b>Viscosity</b>		
Normal	32	80%
Low	5	12.5%
Highly viscous	3	7.5%
<b>Liquefaction time</b>		
10 to 30 min	36	90%
More than 30 min	4	10%
<b>Fructose</b>		
Present	40	100%
Absent	0	0%
<b>Buoyancy</b>		
Present	23	57.5%
Absent	17	42.5%
<b>Impression</b>		
Azoospermia	10	25%
Oligospermia	4	10%
Asthenospermia	5	12.5%
Oligoasthenospermia	15	37.5%
Normospermia	6	15%

## LIQUIFACTION TIME



## FRUCTOSE





## OBSERVATION

### Concentration:

Out of 40 patients 25% had no sperms. 7.5 % had sperm count less than 1 million, 40% had count 1 to 15 million and 27.5% had sperm count more than 15 million/ml. Fructose is present in all Semen samples.

More than 60% of immotile cells/hpf are seen in 37.5% of patients.

### Byoyancy on water

57.5% of sample floated on water i.e positive for buoyancy test on water

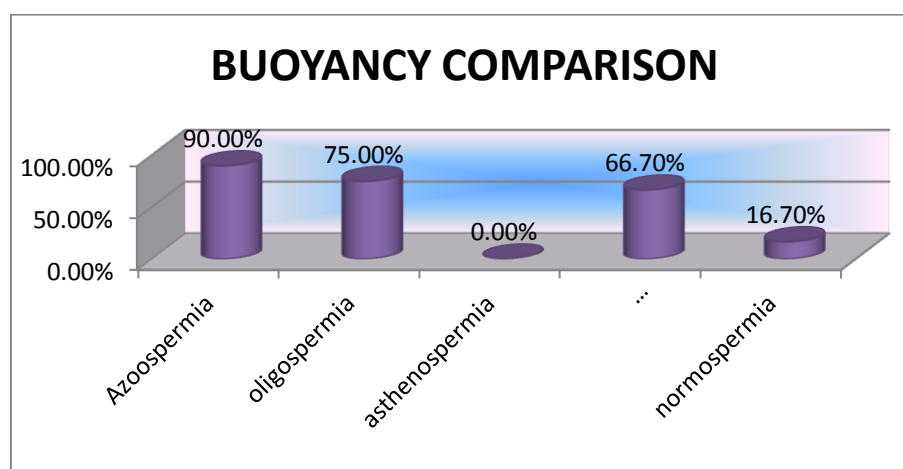
42.5% of sample sank in water i.e negative for buoyancy test on water

### **Inference:**

Out of 40 patients , 25 % of patients were Azoospermic, 10 % were oligospermic, 12.5 % were asthenospermic, 37.5 % were oligoasthenospermic and 15 % were normospermic

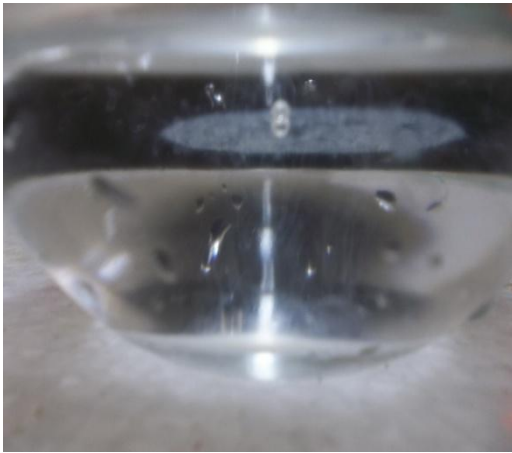
### **Buoyancy test for semen.**

Patient group	No. of patients	Floats on water	Percentage of buoyancy in individual group
Azoospermia	10	9	90.0%
Oligospermia	4	3	75.0%
Asthenospermia	5	0	0.0%
Oligoasthenospermia	15	10	66.7%
Normospermia	6	1	16.7%



Yugimuni's Buoyancy test is positive in 90% of Azoospermia, 75% of Oligospermia, 66.7% in Oligoasthenospermia. Buoyancy test is more sensitive in Azoospermia, Oligospermia and Oligoasthenospermia. Yugimuni's test of checking buoyancy of semen on water is revealed in the study which seemed more sensitive for Azoospermia.

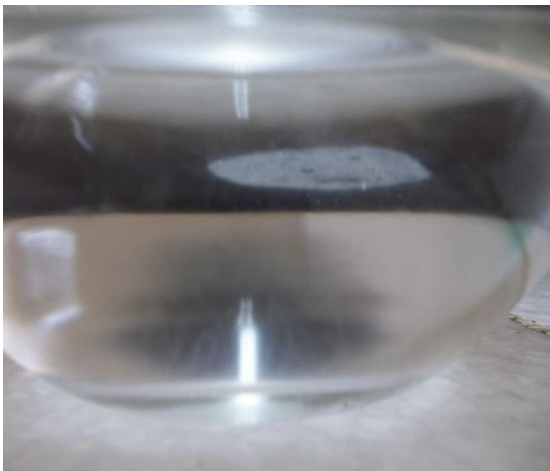
# PHOTOGRAPHS OF SEMEN FLOATING ON WATER



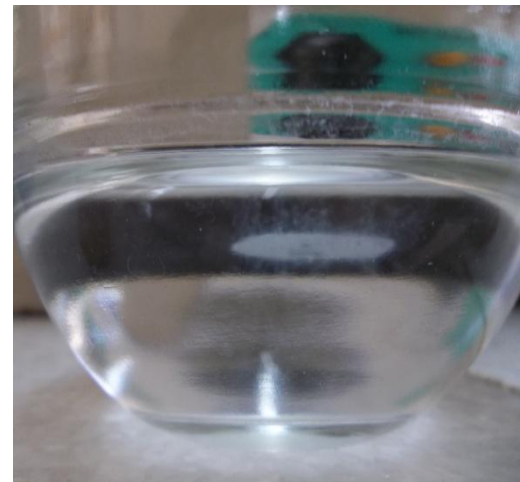
D312



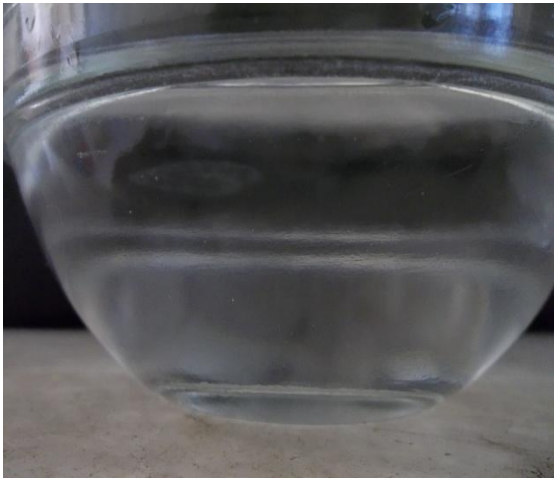
C84379



5058



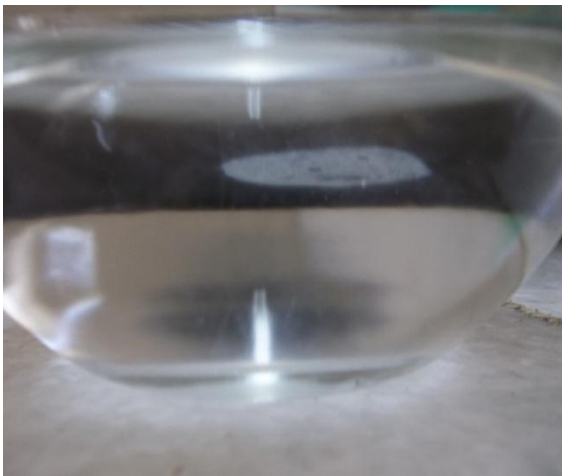
D7416



C95198



C87375



C61345



C84687



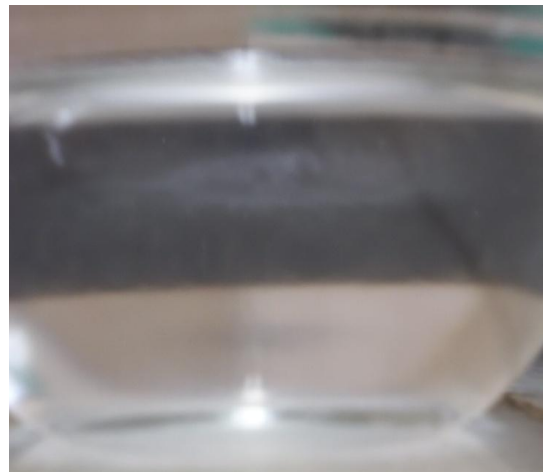
A71658



C99784

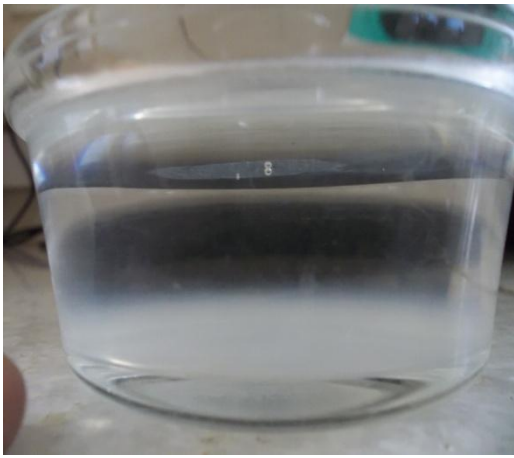


C99468

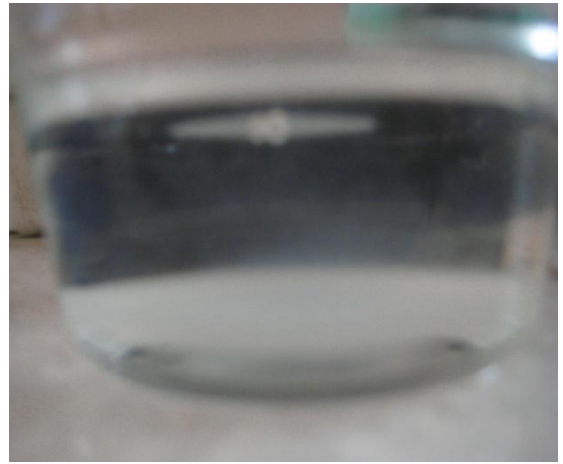


C75622





C88932



D2510



C80751



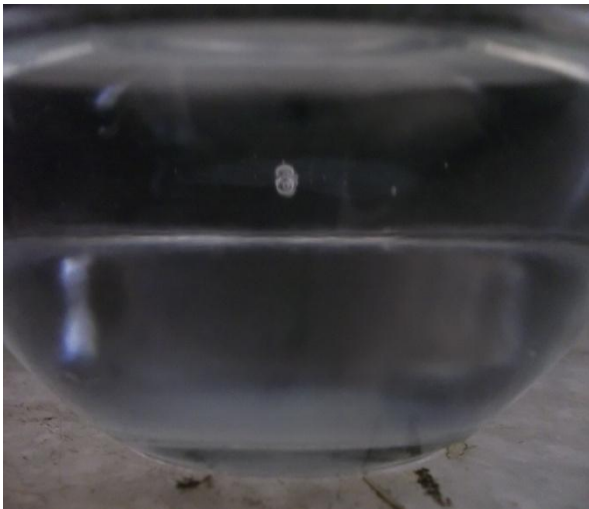
C58396



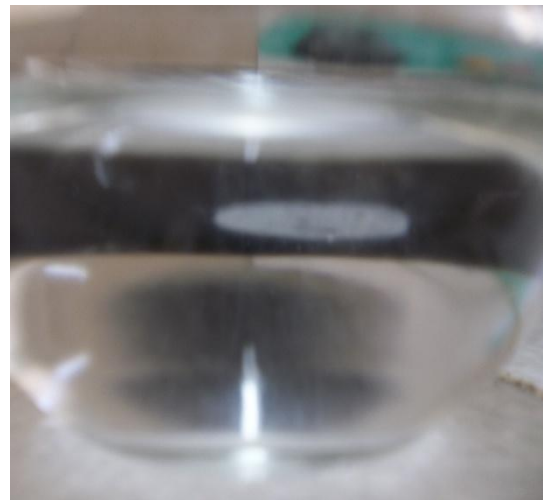
C90733



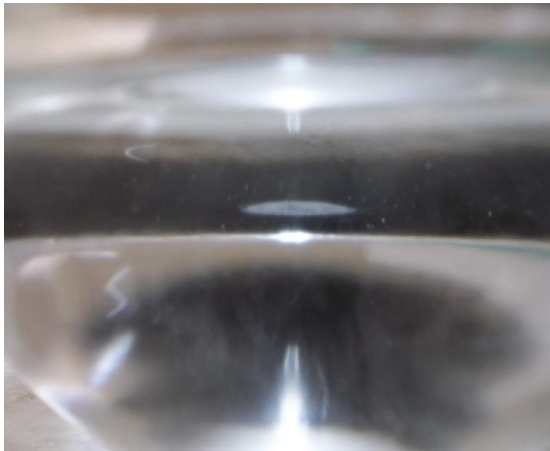
D346



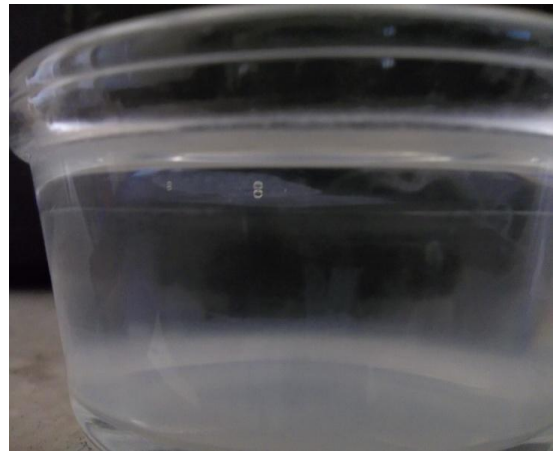
C98931



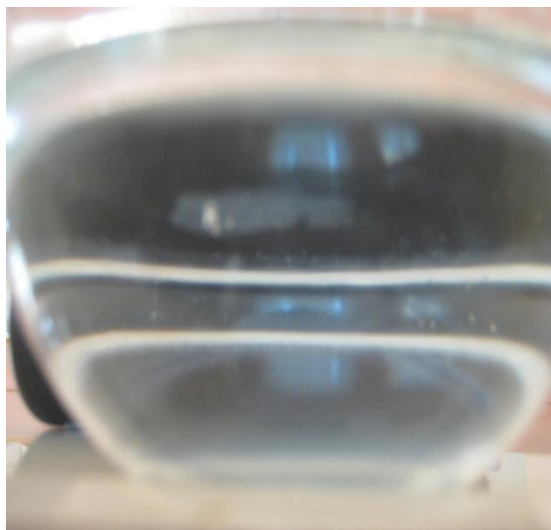
C92688



C88622



C92970



C36372

**TABLE 1 LABORATORY INVESTIGATIONS OF AAN MALADU PATIENTS**

S.NO	OPD/IPD NO	AGE /SEX	Hb (g/dl)	T.C WBC Cells/c u.mm	DC			T.RBC (million /cu.mm)	ESR (1/2-1 hr)	BLOOD SUGAR			S.CHO (mg/dl)	HDL (mg/d l)	LDL (mg/dl)	TGL (mg /dl)	UREA (mg/dl)	CREA T (mg/dl )
					WBC					(mg/dl)								
					P%	L%	E%			F	PP							
1	C36372	32/M	14.2	6300	59	39	02	5.6	2/4	103	131		210	40	89	120	18	0.6
2	D002510	29/M	14.2	4800	65	30	05	5.2	12/24	94	112		180	48	130	190	32	0.8
3	C91837	31/M	15.5	5600	34	53	13	4.9	2/4	99	117		122	30	79	50	24	0.7
4	C88932	32/M,	17.1	9200	35	56	9	6.1	2/4	94	129		187	40	45	205	21	0.6
5	C58396	25/M	16.2	5700	72	22	06	4.3	2/6	105	111		95	25	72	51	14	0.4
6	C90733	29/M	15.9	5600	53	40	06	5.5	4/16	88	103		145	31	74	192	16	0.3
7	C92970	36/M	15.7	6200	60	33	06	4.1	2/4	100	117		138	37	105	124	14	0.4
8	D000346	42/M	4.6	5200	65	26	09	3.4	6/14	102	120		64	23	29	62	19	0.6
9	C98931	42/M	15	7100	59	26	05	4.9	14/36	76	118		181	36	96	217	28	0.7
10	C97354	33/M	16.5	7000	66	30	4	5.0	2/4	106	118		158	32	72	89	18	0.6
11	C96616	32/M	14.4	6800	65	30	5	4.9	2/4	90	100		120	28	79	96	16	0.5
12	A71658	39/M	17.2	7500	73	24	3	5.6	2/4	103	110		141	30	106	70	19	0.6
13	C88622	30/M	15.0	7400	59	36	05	5.3	2/4	91	119		164	33	76	111	15	0.4
14	C34913	30/M	17.0	9800	54	41	05	5.7	2/6	80	96		153	43	100	200	28	0.9
15	C91615	32/M	15.8	8000	70	25	5	5.3	4/10	93	119		240	47	110	286	18	0.7
16	C52180	39/M	12.5	5600	53	40	06	5.5	4/16	88	103		145	31	74	192	16	0.3
17	C89377	30/M	17.5	10300	60	35	5	6.1	2/4	102	134		199	40	126	295	15	0.4
18	C79763	40/M	15.9	6800	60	34	6	5.1	6/20	110	150		173	42	114	148	25	0.6
19	C98180	31/M	13.2	8000	65	30	5	4.8	2/4	80	104		140	35	92	119	17	0.5
20	C099468	30/M	13.3	9800	70	26	4	4.9	4/16	93	124		137	31	75	130	20	0.6

**TABLE.2. LABORATORY INVESTIGATIONS OF AAN MALADU PATIENTS**

S.No	OPD NO/IPD NO	AGE/SEX	SGOT IU/L	SGPT IU/L	URINE					MOTION		
					ALB	SUGAR	PUS CELLS	EPI CELLS	FROTHINESS	OVA	CYST	OCC.BLD.
1	C36372	32/M	30	48	Nil	Nil	1-2	2-4	Present	Nil	Nil	Negative
2	D002510	29/M	28	40	Nil	Nil	2-3	2-4	Present	Nil	Nil	Negative
3	C91837	31/M	12	13	Nil	Nil	2-3	2-3	Absent	Nil	Nil	Negative
4	C88932	32/M,	24	25	Nil	Nil	1-2	2-3	Present	Nil	Nil	Negative
5	C58396	25/M	17	18	Nil	Nil	2-4	2-4	Present	Nil	Nil	Negative
6	C90733	29/M	14	16	Nil	Nil	2-3	2-3	Present	Nil	Nil	Negative
7	C92970	36/M	32	28	Nil	Nil	2-3	2-3	Present	Nil	Nil	Negative
8	D000346	42/M	14	16	Nil	Nil	4-5	3-4	Present	Nil	Nil	Negative
9	C98931	42/M	24	26	Nil	Nil	2-3	1-2	Absent	Nil	Nil	Negative
10	C97354	33/M	16	18	Nil	Nil	1-2	2-4	Present	Nil	Nil	Negative
11	C96616	32/M	20	22	Nil	Nil	2-3	2-3	Absent	Nil	Nil	Negative
12	A71658	39/M	43	54	Nil	Nil	1-2	2-3	Present	Nil	Nil	Negative
13	C88622	30/M	25	27	Nil	Nil	1-2	2-4	Absent	Nil	Nil	Negative
14	C34913	30/M	30	19	Nil	Nil	3-4	4-5	Absent	Nil	Nil	Negative
15	C91615	32/M	23	16	Nil	Nil	2-3	5-6	Absent	Nil	Nil	Negative
16	C52180	39/M	33	19	Nil	Nil	2-4	2-4	Absent	Nil	Nil	Negative
17	C89377	30/M	18	19	Nil	Nil	2-4	2-4	Absent	Nil	Nil	Negative
18	C79763	40/M	25	30	Nil	Nil	2-3	2-3	Absent	Nil	Nil	Negative
19	C98180	31/M	16	18	Nil	Nil	2-4	2-3	Present	Nil	Nil	Negative
20	C099468	30/M	14	16	Nil	Nil	2-3	2-3	Absent	Nil	Nil	Negative

**TABLE.3. LABORATORY INVESTIGATIONS OF AAN MALADU PATIENTS**

S. NO	OPD/IPD NO	AGE/ SEX	Hb (g/dl)	TC WBC Cells/cu. .mm	DC WBC			TRBC million cells/cu. mm	ESR (1/2-1 hr)	BLOOD SUGAR(mg/dl)			S. CHO (mg/dl)	HDL (mg /dl)	LDL (mg/dl)	TGL (mg/dl)	UREA (mg /dl)	CREAT (mg/dl)
					P%	L%	E%			F	PP	R						
21	C91215	27/M	18.2	5400	58	36	4	5.8	2/4	92	106		155	36	76	97	20	0.6
22	C78433	37/M	17.1	8800	53	40	7	5.4	2/4	110	121		229	41	178	244	26	0.8
23	C92688	32/M	15.2	8500	51	34	15	5.3	2/4	65	79		118	33	76	149	15	0.4
24	C77762	39/M	16.2	9400	64	32	04	4.6	5/10	96	100		148	33	98	280	17	0.5
25	C90111	35/M	15.2	6300	61	34	05	5.2	2/8	123	139		127	30	70	115	17	0.5
26	C099531	31/M	14	6700	60	36	4	4.6	2/4	108	150		146	34	99	87	19	0.7
27	C97431	40/M	14.5	9200	66	30	04	5.0	14/32	95	120		182	42	99	135	25	0.7
28	C80751	41/M	15.8	6200	52	44	04	5.9	2/10	102	143		263	64	126	704	22	0.6
29	C97220	39/M	13.8	7100	49	31	20	3.8	24/58	109	150		175	40	105	108	15	0.4
30	D00312	43/M	15.8	8000	70	25	5	5.3	4/10	93	119		240	47	110	286	18	0.7
31	C84379	40/M	15	8200	52	45	03	5.1	2/6	123	148		185	38	92	138	27	0.7
32	D7416	38/M	13.5	7600	60	35	5	5.4	2/4	93	110		157	33	79	113	20	0.6
33	C95198	32/M	16.5	10300	60	35	5	6.1	2/4	102	134		199	40	126	295	15	0.4
34	C87375	32/M	16	9700	56	25	19	5.5	2/6	93	112		193	39	144	168	24	0.6
35	C84687	34/M	16.3	9300	60	31	9	5.6	2/4	83	105		207	35	102	153	29	0.8
36	C61345	36/M	15.9	6500	60	34	6	5.2	2/4	122	138		175	30	130	93	22	0.6
37	C099784	29/M	15.7	5900	28	68	04	5.0	2/4	100	129		163	36	97	127	15	0.4
38	C77602	28/M	16.6	5500	50	40	9	5.4	4/10	95	118		220	37	116	228	18	0.7
39	C75622	33/M	14.5	10000	66	31	3	5.3	2/4	95	136		229	34	104	520	25	0.8
40	5058	35/M	16.2	4200	50	44	06	4.9	2/4	90	101		122	40	79	70	14	0.4

**TABLE 4. LABORATORY INVESTIGATIONS OF AAN MALADU PATIENTS**

S.No	OPDNO/ IPD NO	AGE/SEX	SGOT IU/L	SGPT IU/L	URINE					MOTION		
					ALB	SUGAR	PUS CELLS	EPI CELLS	FROTHINESS	OVA	CYST	OCC.BLD.
21	C91215	27/M	25	35	Nil	Nil	2-4	2-4	Present	Nil	Nil	Negative
22	C78433	37/M	30	36	Nil	Nil	3-5	4-6	Absent	Nil	Nil	Negative
23	C92688	32/M	20	22	Nil	Nil	1-2	2-4	Present	Nil	Nil	Negative
24	C77762	39/M	27	30	Nil	Nil	2-4	1-2	Present	Nil	Nil	Negative
25	C90111	35/M	43	28	Nil	Nil	1-2	2-4	Absent	Nil	Nil	Negative
26	C099531	31/M	12	14	Nil	Nil	2-3	1-2	Present	Nil	Nil	Negative
27	C97431	40/M	18	19	Nil	Nil	2-3	2-3	Absent	Nil	Nil	Negative
28	C80751	41/M	17	19	Nil	Nil	2-4	2-4	Present	Nil	Nil	Negative
29	C97220	39/M	68	45	Nil	Nil	2-4	1-2	Absent	Nil	Nil	Negative
30	D00312	43/M	19	20	Nil	Nil	2-3	1-2	Absent	Nil	Nil	Negative
31	C84379	40/M	20	22	Nil	Nil	2-4	1-2	Present	Nil	Nil	Negative
32	D7416	38/M	22	24	Nil	Nil	2-4	2-4	Present	Nil	Nil	Negative
33	C95198	32/M	24	19	Nil	Nil	3-5	2-6	Present	Nil	Nil	Negative
34	C87375	32/M	16	17	Nil	Nil	2-4	2-4	Absent	Nil	Nil	Negative
35	C84687	34/M	76	104	Nil	Nil	2-4	1-2	Present	Nil	Nil	Negative
36	C61345	36/M	35	60	Nil	Nil	1-2	1-2	Absent	Nil	Nil	Negative
37	C099784	29/M	19	21	Nil	Nil	2-3	1-2	Absent	Nil	Nil	Negative
38	C77602	28/M	23	33	Nil	Nil	2-4	2-3	Absent	Nil	Nil	Negative
39	C75622	33/M	88	114	Nil	Nil	2-4	2-4	Absent	Nil	Nil	Negative
40	5058	35/M	21	22	Nil	Nil	2-3	4-5	Absent	Nil	Nil	Negative

**TABLE.5 SHOWING ENN VAGAI THERVUGAL (EIGHT FOLD EXAMINATIONS) RESULTS OF AAN MALADU PATIENTS**

Sl.no	Op/lp no	Age	Naadi	Naa Desired taste	Niram	Mozhi	Vizhi Discolouration	Malam	Moothiram	Neikkuri		Sparisam
									Neerkuri	Shape	spreading	
1	D312	43	Vatha pitham	Pulippu	Veluppu	Thazhantha oli	No	Manjal	Pale yellow	Cylindrical	Slow	Mitha veppam
2	C84379	40	Vatha pitham	Pulippu	Manjal	Sama oli	No	Manjal	Pale yellow	Egg	Slow	Mitha veppam
3	5058	35	Kaba pitham	Pulippu	Manjal	Sama oli	Sivappu	Veluppu	Colourless	Salladai	Slow	Migu veppam
4	C97431	40	Kaba pitham	Inippu	Veluppu	Thazhantha oli	No	Manjal	Pale yellow	Coin	Slow	Thatpam
5	D7416	38	Pitha vatham	Inippu	Karuppu	Thazhantha oli	Karuppu	Manjal	Pale yellow	Salladai	Slow	Mitha veppam
6	C95198	32	Kaba pitham	Inippu	Karuppu	Uratha oli	Karuppu	Manjal	Colourless	Elephant	Slow	Mitha veppam
7	C87375	32	Pitha vatham	Pulippu	Karuppu	Sama oli	Sivappu	Manjal	Pale yellow	Hat	Slow	Mitha veppam
8	C61345	36	Vatha kabam	Pulippu	Karuppu	Sama oli	No	Manjal	Pale yellow	Bird	Slow	Mitha veppam
9	C84687	34	Pitha vatham	Inippu	Thontham	Sama oli	Sivappu	Manjal	Pale yellow	Elliptical	Slow	Mitha veppam
10	C75622	33	Pitha vatham	Inippu	Karuppu	Sama oli	No	Manjal	Colourless	Elliptical	Slow	Mitha veppam
11	C99784	29	Vatha pitham	Pulippu	Karuppu	Sama oli	Karuppu	Manjal	Pale yellow	Pearl	No spreading	Mitha veppam
12	C99220	39	Pitha vatham	Inippu	Karuppu	Thazhantha oli	No	Manjal	Dark yellow	Salladai	Fast	Thatpam
13	C80751	41	Pitha vatham	Pulippu	Karuppu	Sama oli	Sivappu	Manjal	Pale yellow	Bird	Slow	Migu veppam
14	C99531	31	Vatha pitham	Inippu	Thontham	Sama oli	No	Manjal	Pale yellow	Snake	Slow	Mitha veppam
15	C90111	35	Vatha pitham	Pulippu	Karuppu	Sama oli	Karuppu	Karuppu	Colourless	Salladai	Fast	Mitha veppam
16	C77602	28	Vatha pitham	Inippu	Karuppu	Sama oli	No	Manjal	Colourless	Mountain	Slow	Mitha veppam
17	C36372	30	Pitha vatham	Pulippu	Manjal	Sama oli	No	Manjal	Pale yellow	Coin	Slow	Migu veppam
18	D2510	29	Pitha vatham	Kaippu	Manjal	Sama oli	No	Manjal	Pale yellow	Salladaikan	Fast	Migu veppam
19	C91837	31	Pitha vatham	Kaippu	Karuppu	Sama oli	No	Manjal	Pale yellow	Coin	Slow	Migu veppam
20	C88932	32	Vatha pitham	Pulippu	Thontham	Sama oli	No	Manjal	Pale yellow	Coin	Slow	Mitha veppam



**TABLE.6 SHOWING ENN VAGAI THERVUGAL (EIGHT FOLD EXAMINATIONS) RESULTS OF AAN MALADU PATIENTS**

Sl.no	Op /Ip no	Age	Naadi	Naa Desired taste	Niram	Mozhi	Vizhi Discolouration	Malam	Moothiram	Neikkuri		Sparisam
									Neerkuri	Shape	spreading	
21	C58396	25	Vatha pitham	Pulippu	Karuppu	Sama oli	No	Manjal	Pale yellow	Weapon	Slow	Mitha veppam
22	C90733	29	Vatha pitham	Pulippu	Karuppu	Sama oli	No	Manjal	Pale yellow	Coin	Slow	Mitha veppam
23	C92970	36	Pitham vatham	Kaippu	Karuppu	Sama oli	Karuppu	Manjal	Colourless	Egg	Slow	Mitha veppam
24	D346	42	Pitham vatham	Inippu	Karuppu	Sama oli	Veluppu	Manjal	Pale yellow	Coin	Slow	Migu veppam
25	C98931	42	Vatha pitham	Pulippu	Karuppu	Sama oli	Karuppu	Karuppu	Colourless	Seed	Slow	Mitha veppam
26	C97354	34	Pitham vatham	Kaippu	Manjal	Sama oli	No	Manjal	Pale yellow	Heart	Slow	Mitha veppam
27	C96616	32	Pitham vatham	Inippu	Karuppu	Uratha oli	Sivappu	Karuppu	Pale yellow	Coin	Slow	Mitha veppam
28	A71658	39	Vatha pitham	Inippu	Karuppu	Sama oli	Karuppu	Manjal	Pale yellow	Coin	Slow	Mitha veppam
29	C88622	30	Vatha pitham	Pulippu	Karuppu	Sama oli	Karuppu	Karuppu	Pale yellow	Coin	Slow	Mitha veppam
30	C34913	30	Pitham vatham	Inippu	Karuppu	Sama oli	No	Manjal	Colourless	Egg	Slow	Mitha veppam
31	C91615	32	Vatha kabam	Kaippu	Karuppu	Uratha oli	Karuppu	Manjal	Pale yellow	Coin	Slow	Migu veppam
32	C52180	38	Vatha pitham	Pulippu	Karuppu	Sama oli	Karuppu	Karuppu	Pale yellow	Pearl	Slow	Mitha veppam
33	C89337	30	Pitham vatham	Kaippu	Manjal	Uratha oli	No	Manjal	Pale yellow	Coin	Slow	Migu veppam
34	C79763	40	Vathakabam	Kaippu	Karuppu	Uratha oli	Karuppu	Manjal	Pale yellow	Instrument	Slow	Migu veppam
35	C98180	31	Pitham vatham	Pulippu	Karuppu	Sama oli	Sivappu	Manjal	Pale yellow	Coin	Slow	Mitha veppam
36	C99468	30	Vatha pitham	Pulippu	Karuppu	Sama oli	No	Karuppu	Pale yellow	Coin	Slow	Mitha veppam
37	C91215	27	Pitham vatham	Pulippu	Karuppu	Sama oli	Karuppu	Manjal	Colourless	Coin	Slow	Mitha veppam
38	C78483	37	Pitham vatham	Inippu	Karuppu	Uratha oli	Sivappu	Manjal	Pale yellow	Coin	Slow	Mitha veppam
39	C92688	32	Pitham vatham	Inippu	Karuppu	Sama oli	No	Manjal	Pale yellow	Mountain	Slow	Migu veppam
40	C77762	39	Pitham vatham	Kaippu	Karuppu	Uratha oli	Karuppu	Manjal	Pale yellow	Coin	Slow	Migu veppam

**TABLE.7 SHOWING BODY TYPE, WRIST CIRCUMBREADTH SIGN, ASTROLOGY RESULTS OF AAN MALADU PATIENTS**

SL.NO	OP /IP NO	AGE	TYPE OF YAKKAI	MANIKKADAI NOOL		RAASI	NATCHATHIRAM
				Rt(fbs)	Lt(fbs)		
1	D312	43	Kabapitham	9.75	10	Magaram	Thiruvonam
2	C84379	40	Vathapitham	9.25	9.25	Thulam	Visakam
3	5058	35	Vathapitham	9	9	Not known	Not known
4	C97431	40	Kabapitham	10.5	10.75	Simmam	Uthiram
5	D7416	38	Kabapitham	10	9.75	Rishabam	Karthikai
6	C95198	32	Pitha vatham	9	9	Kanni	Astham
7	C87375	32	Pitha vatham	9	9	Rishabam	Rohini
8	C61345	36	Kabapitham	8.75	9	Kanni	Not known
9	C84687	34	Vathapitham	9.75	9.5	Thulaam	Swathy
10	C75622	33	Pithavatham	9	9	Midhunam	Mirugaseeridam
11	C99784	29	Vathapitham	9.25	9.25	Not known	Not known
12	C99220	39	Kabapitham	11	11	Midhunam	Thiruvathirai
13	C80751	41	Pithavatham	9	9.25	Midhunam	Thiruvathirai
14	C99531	31	Kabapitham	10	10	Rishabam	Karthigai
15	C90111	35	Pithavatham	8.5	8.5	Not known	Not known
16	C77602	28	Vathapitham	10	10.25	Midhunam	Thiruvathirai
17	C36372	30	Vathapitham	9.25	9.25	Meenam	Revathy
18	D2510	29	Pithakabam	9.25	9.25	Thulam	Visakam
19	C91837	31	Kabapitham	9.25	9.25	Not known	Not known
20	C88932	32	Vathapitham	9	9	Not known	Not known

**TABLE.8 SHOWING BODY TYPE, WRIST CIRCUMBREADTH SIGN, ASTROLOGY RESULTS OF AAN MALADU PATIENTS**

Sl.no	Op/ip no	Age	Type of Yakkai	Manikkadai nool		Raasi	Natchathiram
				Right	left		
21	C58396	25	Pithakabam	9.25	9.25	Kanni	Astham
22	C90733	29	Pithakabam	9.25	9.25	Not known	Not known
23	C92970	36	Pithavatham	9	9	Maharam	Thiruvonam
24	D346	42	Pithavatham	9.25	9.25	Midhunam	Thiruvathirai
25	C98931	42	Vathapitham	8.75	9	Not known	Not known
26	C97354	34	Pithavatham	9	9	Kadagam	Aaeylam
27	C96616	32	Kabapitham	9.25	9.75	Midhunam	Punarpoosam
28	A71658	39	Pithakabam	9.5	9.5	Rishabam	Mirugaseeridam
29	C88622	30	Vathakabam	10	9.75	Kanni	Astham
30	C58396	25	Pithavatham	10	10	Mesam	Uthiram
31	C91615	32	Kabapitham	10.25	10.5	Kumbam	Pooratathi
32	C52180	38	Vathapitham	9.25	9.25	Dhanusu	Pooradam
33	C89337	30	Vathapitham	9	9	Not known	Not known
34	C79763	40	Kabapitham	10.25	10.5	Simmam	Uthiram
35	C98180	31	Vathapitham	9.25	9.25	Simmam	Not known
36	C99468	30	Kabavatham	9.75	9.75	Kumbam	Sathiyam
37	C91215	27	Pithavatham	9	9	Kanni	Not known
38	C78483	37	Kabapitham	9.5	9.25	Midhunam	Punarpoosam
39	C92688	32	Vathapitham	8.5	9	Maharam	Not known
40	C77762	39	Kabapitham	10	10	Viruchigam	Kettai

**TABLE 9. SEMEN ANALYSIS RESULTS OF AAN MALADU PATIENTS**

S.no	Op /lp no	Age	Duration	Count	Motility			Morph Ology	Viscosity	Liquefaction time	pH	Fructose	Buoyancy	Impression
			Years	Million/ml	Active%	Sluggish%	Im Motile%	Normal		Minutes				
1	D312	43	3	0	0	0	0	0	Normal	15	8	Present	Present	Azoospermia
2	C84379	40	1.5	0	0	0	0	0	Normal	30	8	Present	Present	Azoospermia
3	5058	35	2	0	0	0	0	0	Normal	10	8	Present	Present	Azoospermia
4	D7416	38	1	0	0	0	0	0	Low	10	8	Present	Present	Azoospermia
5	C95198	32	2	0	0	0	0	0	Normal	15	8	Present	Present	Azoospermia
6	C87375	32	2	0	0	0	0	0	Low	10	8	Present	Present	Azoospermia
7	C61345	36	2	0	0	0	0	0	Normal	10	8	Present	Present	Azoospermia
8	C84687	34	3.5	0	0	0	0	0	Low	30	8	Present	Present	Azoospermia
9	C75622	33	1	0	0	0	0	0	Low	15	8	Present	Absent	Azoospermia
10	C99784	29	2	0	0	0	0	0	Normal	10	9	Present	Present	Azoospermia
11	C91837	31	1	4	10	20	70	30	Normal	30	8	Present	Absent	Oligoasthenospermia
12	C88932	32	2	8	20	30	50	50	Normal	10	9	Present	Present	Oligoasthenospermia
13	C99220	39	1	<1	20	20	60	50	Normal	20	8	Present	Present	Oligoasthenospermia
14	C80751	41	2	<1	10	10	80	30	Normal	20	8	Present	Present	Oligoasthenospermia
15	C58396	25	2.5	11	20	30	50	50	Low	10	8	Present	Present	Oligoasthenospermia
16	C99531	31	2	<1	10	20	70	40	Normal	15	8	Present	Absent	Oligoasthenospermia
17	C90733	29	4	13	9	11	80	50	Normal	30	8	Present	Present	Oligoasthenospermia
18	C97431	40	2	1	10	30	60	50	Normal	15	8	Present	Absent	Oligoasthenospermia
19	D346	42	2.5	2.8	10	20	70	50	Normal	10	8	Present	Present	Oligoasthenospermia
20	C98931	42	2	10	10	20	70	50	Normal	30	8	Present	Present	Oligoasthenospermia

**TABLE 10. SEMEN ANALYSIS RESULTS OF AAN MALADU PATIENTS**

S.no	Op /lp no	Age	Duration	Count	Motility			Morphology	Viscosity	Liquefaction time	pH	Fructose	Buoyancy	Impression
			Years	Million/ml	Active%	Sluggish%	Im motile%	Normal		Minutes				
21	C97354	34	2	3	10	30	60	50	Normal	15	9	Present	Absent	Oligoasthenospermia
22	C90111	35	2.5	1	10	20	70	40	Normal	10	8	Present	Present	Oligoasthenospermia
23	C96616	32	2.5	2	10	20	70	50	High	>30	8	Present	Absent	Oligoasthenospermia
24	A71658	39	2	5	10	20	70	40	Normal	10	8	Present	Present	Oligoasthenospermia
25	C88622	30	1	5.2	20	20	60	50	Normal	15	8	Present	Present	Oligoasthenospermia
26	C36372	30	1.5	15	40	40	20	40	Normal	15	8	Present	Present	Oligospermia
27	D2510	29	2.5	14	40	20	40	40	Normal	15	9	Present	Present	Oligospermia
28	C79763	40	1	4	40	30	30	50	Normal	10	9	Present	Absent	Oligospermia
29	C92970	36	2	6	40	30	30	60	Normal	10	8	Present	Present	Olgospermia
30	C77602	28	1	53	30	40	30	60	Normal	10	8	Present	Absent	Asthenospermia
31	C34913	30	2.5	90	20	40	40	40	Normal	15	8	Present	Absent	Asthenospermia
32	C52180	38	2	80	10	30	60	30	Normal	20	8	Present	Absent	Asthenospermia
33	C92688	32	1	39	10	30	60	40	High	>30	9	Present	Absent	Asthenospermia
34	C77762	39	2.5	28	20	20	60	40	Normal	15	8	Present	Absent	Asthenospermia
35	C91615	32	1	70	60	30	10	50	Normal	20	8.5	Present	Absent	Normospermia
36	C89337	30	2.5	63	40	30	30	40	Normal	10	8	Present	Absent	Normospermia
37	C98180	31	1	87	60	20	20	50	Normal	15	8	Present	Absent	Normospermia
38	C99468	30	2.5	44	40	30	30	50	Normal	>30	8	Present	Present	Normospermia
39	C91215	27	2	62	60	20	20	50	High	>30	8	Present	Absent	Normospermia
40	C78483	37	2	70	50	30	20	60	Normal	10	8	Present	Absent	Normospermia

## 10. DISCUSSION

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Aan maladu is classified under the Maladu diseases by Sage Yugimuni in his treatise Yugimuni Sikitchasaaram. Siddha diagnostic approach to Aan maladu patients include *Envagai thervu* (Eight fold examination), *Manikkadai nool* (wrist circumbreadth sign), *Udalkattugal*, *Yakkai* (body type determination), and *Sukkila parisothanai* (Siddha way of semen analysis involving the qualities expounded by Sage Yugimuni).

The author had screened 100 patients of Aan maladu in the Noi Naadal Department of NIS. Among those 100 cases, 40 cases were enrolled in the study based on the selection criteria and the diagnostic parameters were applied and observed.

Majority of study cases (79.5%) in the study were of 31-40 years. This age group seems to be the period of awakening to infertile men to get rid of the disorder medically. Most of patients (97.5%) were non vegetarians. Non-vegetarian diet which is considered as thamo gunam food seems to alter the body's mind and soul. Thamo gunam would alter reproductive ability also.

Majority of cases were working in hot atmosphere (47.5%) and sedentary style (40%). These are the suitable conditions for derangement of Pitham, which can affect along with Vatham to cause Varicocele, Premature ejaculation and Reduced semen production. Among 40 patients, 80% of patients had history and complaints of premature ejaculation: 58% patients had erectile dysfunction; these two features remained as a significant concomitant reproductive abnormalities in the study group. As per Siddha text, Vali derangement with Azhal results in Premature ejaculation. Hence Vali azhal derangement was seen in 80% of patients.

Association was observed between tobacco usage (35%) and Infertility among the patients. In addition, history of alcohol consumption was recorded in 30% of patients. 8% of patients had history of mumps. The observation goes to validate the literary stating about Karumpanisai ammai and Pootuthaal ammai mentioned in Siddha literature which are considered to be viral/pox illnesses notorious to precipitate infertility in men.

Out of 40 cases, 57.5 % of cases had the disease for 2-4 years, 22.5% of cases had the disease for 5-9 years and 20% of case had the disease for more than 10years. Majority of the cases suffering from this disease had duration of 2 to 4 years. 20% of case had the disease for more than 10years, revealed history of failure of assisted reproductive therapies, nil sperm count. Azoospermia and oligoasthenospermia seems to be prevalent in this 20% patients.

As per siddha text Kabam Udal people are more prone to (*"Inthiriyakuraivullavan; Pillaipaetiril Kuraindhavan"*) reduced capacity to procreate and Pitham udal are prone to (*"Arpa sukkilam"*) oligospermia. This is revealed in the study as the most of patients were of KabaPitham body type(32.5%).

All the cases have affected Sukkilam and Saaram. Majority of cases more than 70% had all thathus affected. According to theraiyar Food nourishes semen on the seventh day after ingestion. The interruption in the nourishment chain of udal thathu in most of patients affected the production of semen. Medicine of selection should enhance the quality of affected udal thathu to get rid of semen abnormalities for these patients.

In the study 62.5% of patients had different pulsations in Pitham like suzhalal, thullal, kuthithal which reveals that according to Naadi examination, Pitha humour stood as primary reason for 62.5%. In the study 37.5% of patients had different pulsations in vatham like suzhalal, thullal, kuthithal, which reveals that according to Naadi, Vatham humour stood as primary reason for 37.5%. As per Sathaga naadi and Agathiyar, Male infertility related pulse appraisal were Pithavatha Naadi, Vathapitha Naadi, Pithathil vayu Naadi and Vatha naadi. This was observed in the study as majority of Aan maladu patients had Pithavatham(50%) and Vathapitham naadi(35%). Kabam was not felt in pulse appraisal in majority of cases which is according to the above said literature.

Among the 40 patients, 45% of patients had increased desire for sour taste which is due to had Vatha derangement. Vatha derangement seems to be predominant than other humours.

In Nirakuri the study reveals 72.5 % of patients were dark, 15 % were yellowish, 7.5% were wheatish. As per Niram Vatham seems to be prevalent.

In Mozhikuri, 72.5 % of patients were normal pitched, 17.5 % were high pitched, 10% were low pitched. As per mozhi, Vatham seems to be prevalent in the study sample. Pitham stands next to Vatham.

In Meikkuri, in the study 65 % of patients were of Mithaveppam ,30 % were of Miguveppam , 5% were of Thatpam. As per Meikuri, Vatham seems to be prevalent in the study sample. Pitham stands next to vatham. In Vizhi examination, Burning sensation in eyes near half of the study group is due to Pitha humour derangement. 32.5% had muddy discolouration in eyes due to vatha derangement. Through eye examination either Pitham or vatham seems to get deranged in a reasonable group of patients. In Malam examination, 20% of patients had frequent history of constipation. Vatham derangement may be the cause for infertility for these group as per Malakuri

In Urine examination 47.5 % had frothy urine. According to Yugimuni, Frothy urine is one of the feature of Aan maladu, which revealed in the study in near the half of patients. As per siddha text, frothiness in urine is due to Kabam derangement. In Neikkuri, Coin shape appeared in 40.0%.of patients which reveals the Kabapitham derangement. 90% of patients had slowly spreading Neikkuri by which they can be considered as curable.7.5% had fast spreading nature by which they can be considered as hardly curable. 12.5% of Neikkuri, with seiving nature (Salladaikan) can be considered as having Kabam derangement according to Sage Theraiyar.

In Wrist circumbreadth sign, Majority of patients had 9.25 or 9.75 fingerbreadth. As per siddha text, thathunattam is one of the indication for 8 and half. In the study the above finding is documented here for only 5% of cases. In Astrology, majority of patients were of either Kanni or Rishabam or Midhunam raasi. 62% of patients were aware of Natchathiram. Comparing to other natchathiram, thiruvathirai(16%),Astham(12%) and Uthiram(12%) seemed to be likely to affect with for Aanmaladu.

Among 40 patients, 95.0% of patients had affected Viyanan , 27.5 % had affected Abanan, 32.5 % had affected Samanan,17.5% had affected Pranan, 7.5 % had affected naahan, 5% had affected Thevathathan. Hence Vatham seems to be deranged in almost all patients.



As per Siddha text, Vatham on derangement causes weakness to body parts. In male infertility the weakness of a genital organs ( Erectile dysfunction and Ejaculatory defects) is due to Vatha derangement. Abaanan, one of the Vatham is responsible for controlling ejaculatory function. In Aan maladu, primarily affected Vayukkal are Pranan, Abanan, Vyanan, Samanan, Thevadhathan. These things were well revealed in the study .

Out of 40 cases, 15% had affected Anilam, 12.5% of cases had affected Prasagam, 2.5% had affected Ranjagam, 2.5% of cases had affected Aalosagam, 100% of cases had affected Saadhagam. Saadhagam is affected in all patients which make the disease condition more worser as it can derange other Pitham components. According to Siddha Maruthuvanga Surukkam, Derangement due to addition of heat with Pitha characters, will result in disorder in Pitham residing places and other homoural places.e.g.varicocele in Vatha place due to Pitha elevation.

In Aan maladu, primarily affected Pitham component is Saadhaga pitham and Anila pitham. Out of 40 cases, 12.5% of the cases had deranged Avalambagam, 12.5% of the cases had deranged Santhigam, 5% of the cases had deranged Kilethagam, 2.5% of the cases had deranged Pothagam. In this study, Kabam derangement seems to be comparatively lesser than Vali and Azhal.

Out of 40 patients 37.5% were oligoasthenospermic, 25% were Azoospermic, 10 % were Oligospermic, 12.5% were Asthenospermic, and 15 % were Normospermic. Fructose was present in all the samples even in the Azoospermia patients which reveal that there were no obstructive Azoospermia or Primary testicular failure among the study group. More than 60% of immotile cells/hpf are seen in 37.5% of patients. This observation justifies Yugi's sayings about significance of vitality and motility of sperms for fertility.

In Buoyancy test, 57.5% of samples floated on water i.e positive for buoyancy test on water. 42.5% of sample sank in water i.e negative for buoyancy test on water. Yugimuni's Buoyancy test is positive in 90% of azoospermia, 75% of oligospermia, 66.7% in oligoasthenospermia. Buoyancy test is highly sensitive to Azoospermia, Oligospermia and Oligoasthenospermia. Yugimuni's test of checking buoyancy of semen on water is validated in the study which seems more sensitive for Azoospermia.

## 11. CONCLUSION

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The Diagnostic procedures of Siddha may be an age-old method; however, it is time-tested and has been proved successful by the generations of Siddha community. The study revealed that majority of Aan maladu patients had either Vatham or Pitham derangement as the primary cause. Vatha pitham and Pithavatham were the Pulse appraisal seen in most of the patients. Good Line of treatment for Aan maladu/male infertility would start with alleviation of primarily affected humour, followed by compensation of the secondarily affected humour, then toning up of the affected Udalthathukkal.

Even though in the present study, the sample size of 40 was small, the findings with respect to the floating nature created by the semen on water in majority of the infertile patients matched with the description given in literature. The Diagnostic tool expounded by Sage Yugi, the semen's buoyancy test on water is found to be more sensitive in Azoospermia than other semen abnormalities. The present study is a basic step to enlighten semen analysis in a Siddha way. Need for further research on a larger group of patients to arrive at more definite conclusions has been felt.

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**ANNEXURE I**

**NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47.**

**A STUDY ON DIAGNOSTIC METHODOLOGY**

**IN SIDDHA SYSTEM FOR AAN MALADU /MALE INFERTILITY**

**FORM I**

**SCREENING AND SELECTION PROFORMA**

1. O.P.No \_\_\_\_\_ 2. I.P No \_\_\_\_\_ 3. Bed No: \_\_\_\_\_ 4. S.No: \_\_\_\_\_

5. Name: \_\_\_\_\_ 6. Age (years):  7. Gender: M ☐ F ☐

8. Occupation: \_\_\_\_\_ 9. Income: \_\_\_\_\_

10. Address: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

11. Contact Nos: -----

12. E-mail : -----

**INCLUSION CRITERIA**

	YES	NO
1. Male of Age group- 20 to 45 years	<input type="checkbox"/>	<input type="checkbox"/>
2. Married	<input type="checkbox"/>	<input type="checkbox"/>
3. Failure to conceive his partner even after unprotected intercourse for 12 months and above	<input type="checkbox"/>	<input type="checkbox"/>
4. Willing to give semen sample for semen analysis.	<input type="checkbox"/>	<input type="checkbox"/>

## EXCLUSION CRITERIA

	YES	NO
1.Genetic disorders identified by clinical features.	<input type="checkbox"/>	<input type="checkbox"/>
2. Findings of defects in the partner's conceptual ability	<input type="checkbox"/>	<input type="checkbox"/>
3. History of Miscarriage of his partner.	<input type="checkbox"/>	<input type="checkbox"/>
4. Post vasectomy	<input type="checkbox"/>	<input type="checkbox"/>
5. Major systemic illness	<input type="checkbox"/>	<input type="checkbox"/>

**Date :**

**P.G Scholar**

**Lecturer**

## ANNEXURE I I

**NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47.  
DEPARTMENT OF NOI NAADAL  
A STUDY ON DIAGNOSTIC METHODOLOGY  
IN SIDDHA SYSTEM FOR AAN MALADU /MALE INFERTILITY**

**FORM I-A  
HISTORY PROFORMA**

1. Sl.No of the case: \_\_\_\_\_

2. Name: \_\_\_\_\_ Height: \_\_\_\_\_ cms Weight: \_\_\_\_\_ Kg

3. Age (years): \_\_\_\_\_ DOB 

--	--

--	--

--	--	--	--

  
D D M M Y E A R

4. Educational Status:

1) Illiterate ☐ 2) Literate ☐ 3) Student ☐ 4) Graduate/Postgraduate ☐

5. Occupation:

**6. Complaints and Duration:**

---

---

---

**7. History of present illness:**

---

---

---

**8. History of Past illness:**

	1. Yes	2. No
Mumps	<input type="checkbox"/>	<input type="checkbox"/>
Orchitis	<input type="checkbox"/>	<input type="checkbox"/>

Sexually transmitted diseases	<input type="checkbox"/>	<input type="checkbox"/>
Systemic hypertension	<input type="checkbox"/>	<input type="checkbox"/>
Diabetes Mellitus	<input type="checkbox"/>	<input type="checkbox"/>
Ischemic heart disease	<input type="checkbox"/>	<input type="checkbox"/>
Dyslipidaemia	<input type="checkbox"/>	<input type="checkbox"/>
Jaundice	<input type="checkbox"/>	<input type="checkbox"/>
Bronchial asthma	<input type="checkbox"/>	<input type="checkbox"/>
Any drug allergy	<input type="checkbox"/>	<input type="checkbox"/>
Any surgeries	<input type="checkbox"/>	<input type="checkbox"/>
Any major illnesses	<input type="checkbox"/>	<input type="checkbox"/>

9. Habits :

		1. Yes	2. No
Smoking		<input type="checkbox"/>	<input type="checkbox"/>
Alcoholism		<input type="checkbox"/>	<input type="checkbox"/>
Drug Addiction		<input type="checkbox"/>	<input type="checkbox"/>
Betel nut chewer:		<input type="checkbox"/>	<input type="checkbox"/>
Snuff		<input type="checkbox"/>	<input type="checkbox"/>
Milk		<input type="checkbox"/>	<input type="checkbox"/>
Type of diet	V <input type="checkbox"/> NV	<input type="checkbox"/>	M <input type="checkbox"/>

10. Personal history:

Marital status: Married ☐ Unmarried ☐

Duration of marriage \_\_\_\_\_

Consanguineous Yes ☐ NO ☐



## 11.Occupational history:

Nature of work:

- |                                    |                          |
|------------------------------------|--------------------------|
| 1) Sedentary work                  | <input type="checkbox"/> |
| 2) Field work with physical labour | <input type="checkbox"/> |
| 3) Field work Executive            | <input type="checkbox"/> |
| 4)working in hot atmosphere        | <input type="checkbox"/> |
| 5)exposure to radiation            | <input type="checkbox"/> |

## 12. Sexual history

Erectile function	Normal	<input type="checkbox"/>	Affected	<input type="checkbox"/>
Ejaculatory effect	Normal	<input type="checkbox"/>	Affected	<input type="checkbox"/>
Frequency of intercourse per month	<input type="text"/> <input type="text"/>			
Frequency of masturbation per month	<input type="text"/> <input type="text"/>			
	Yes		No	
Lubricants	<input type="checkbox"/>		<input type="checkbox"/>	
Nocturnal emission	<input type="checkbox"/>		<input type="checkbox"/>	
Painful coitus	<input type="checkbox"/>		<input type="checkbox"/>	
Burning micturition	<input type="checkbox"/>		<input type="checkbox"/>	
Semen discharge in urine	<input type="checkbox"/>		<input type="checkbox"/>	

## 11. Family history:

No. of abortions his wife had \_\_\_\_\_

History of major illness

Yes

No

Father

☐ \_\_\_\_\_☐

Mother

☐ \_\_\_\_\_☐

Others:

12. Drug history

Steroids

Yes

☐

No

☐

Antidepressants

Yes

☐

No

☐

**ANNEXURE I I I**  
**NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47**  
**DEPARTMENT OF NOI NAADAL**  
**A STUDY ON DIAGNOSTIC METHODOLOGY**  
**IN SIDDHA SYSTEM FOR AAN MALADU /MALE INFERTILITY**  
**FORM II**

**CLINICAL ASSESSMENT**

1. Serial No: \_\_\_\_\_

2. Name: \_\_\_\_\_

3. Date of birth: 

D	D

M	M

Y	E	A	R

4. Age: \_\_\_\_\_ years      Sex: \_\_\_\_\_

5. Date: \_\_\_\_\_

**GENERAL EXAMINATION:**

1. Pallor:
2. Icterus:
3. Cyanosis:
4. Lymphadenopathy:
5. Pedal edema:
6. Clubbing:
7. Jugular vein pulsation:
8. Temperature (°F):
9. Pulse rate:
10. Heart rate:
11. Respiratory rate:

12. Blood pressure:

13. Height: \_\_\_\_\_ cms.

14. Weight (kg): BMI \_\_\_\_\_ (Weight Kg/ Height m<sup>2</sup>)

### VITAL ORGANS EXAMINATION

	1. Normal	2. Affected	
1. Heart	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Lungs	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Brain	<input type="checkbox"/>	<input type="checkbox"/>	_____
4. Liver	<input type="checkbox"/>	<input type="checkbox"/>	_____
5. Kidney	<input type="checkbox"/>	<input type="checkbox"/>	_____
6. Spleen	<input type="checkbox"/>	<input type="checkbox"/>	_____
7. Stomach	<input type="checkbox"/>	<input type="checkbox"/>	_____

### SYSTEMIC EXAMINATION:

#### 1. Reproductive system

	Yes	No
Hydrocele	<input type="checkbox"/>	<input type="checkbox"/>
Varicocele	<input type="checkbox"/>	<input type="checkbox"/>
Hernia	<input type="checkbox"/>	<input type="checkbox"/>
Filarial scrotum	<input type="checkbox"/>	<input type="checkbox"/>
Both testicles present in scrotum	<input type="checkbox"/>	<input type="checkbox"/>

#### Palpation

Size and consistency of testicles    Normal ☐    Affected ☐

- 2..Cardio Vascular System \_\_\_\_\_
- 3..Respiratory System \_\_\_\_\_
- 4.Gastrointestinal System \_\_\_\_\_
- 5.Central Nervous System \_\_\_\_\_
- 6..Uro genital System \_\_\_\_\_
- 7.Endocrine System \_\_\_\_\_

## SIDDHA SYSTEM OF EXAMINATION

### [1] ENVAGAI THERVU [EIGHT-FOLD EXAMINATION]

#### I. NAADI (KAI KURI) (RADIAL PULSE READING)

##### (a) Naadi Nithanam (Pulse Appraisal)

##### 1. Kalam

##### a.Perumpozhuthu (Pulse reading season)

- |  |  |
|--|--|
| 1. Kaarkaalam<br>(Rainy season) <input type="checkbox"/>     | 2.Koothirkaalam<br>(Autumn) <input type="checkbox"/>         |
| 3. Munpanikaalam<br>(Early winter) <input type="checkbox"/>  | 4.Pinpanikaalam<br>(Late winter) <input type="checkbox"/>    |
| 5. Ilavenirkaalam<br>(Early summer) <input type="checkbox"/> | 6.Muthuvenirkaalam<br>(Late summer) <input type="checkbox"/> |

##### b.Sirupozhuthu

- |                                     |                                    |                                   |
|-------------------------------------|------------------------------------|-----------------------------------|
| 1.Vaikarai <input type="checkbox"/> | 2. Kaalai <input type="checkbox"/> | 3. Yamam <input type="checkbox"/> |
| 4. Erpaadu <input type="checkbox"/> | 5. Maalai <input type="checkbox"/> | 6 .Iravu <input type="checkbox"/> |

##### c.Time:

##### 2. Desam (Climate of the patient's habitat)

- |  |   |
|--|---|
| 1. Kulir<br>(Temperate) <input type="checkbox"/> | 2. Veppam<br>(Hot) <input type="checkbox"/> |
|--|---|

- |                  |                                     |                                      |                                    |
|------------------|-------------------------------------|--------------------------------------|------------------------------------|
| 3. Vayathu (Age) | 1. 1-33yrs <input type="checkbox"/> | 2. 34-66yrs <input type="checkbox"/> | 3. 67-100 <input type="checkbox"/> |
|------------------|-------------------------------------|--------------------------------------|------------------------------------|

4. Udal Vanmai (General body condition)

1. Iyyalbu  
(Normal built) ☐

3. Valivu  
(Robust) ☐

4. Melivu  
(Lean) ☐

5. Vanmai (Expansile Nature)

1. Vanmai  
☐

2. Menmai  
☐

6. Panbu (Habit)

1. Thannadai  
(Playing in) ☐

2. Puranadai  
(Playing out) ☐

3. Illaitthal  
(Feeble) ☐

4. Kathithal  
(Swelling) ☐

5. Kuthithal  
(Jumping) ☐

6. Thullal  
(Frisking) ☐

7. Azhutthal  
(ducking) ☐

8. Padutthal  
(Lying) ☐

9. Kalatthal  
(Blending) ☐

10. Munnokku  
(Advancing) ☐

11. Pinnokku  
(Flinching) ☐

12. Suzhalal  
(Revolving) ☐

13. Pakkamnokku  
(Swerving) ☐

**(b) Naadi nadai (Pulse Play)**

1. Vanmai (Expansile Nature)

1. Vatham Vanmai ☐

Menmai ☐

2. Pitham Vanmai ☐

Menmai ☐

3. Kabam Vanmai ☐

Menmai ☐

2. Panbu (Habit)

1. Thannadai  
(Playing in) ☐

2. Puranadai  
(Playing out) ☐

3. Illaitthal  
(Feeble) ☐

4. Kathithal  
(Swelling) ☐

5. Kuthithal  
(Jumping) ☐

6. Thullal  
(Frisking) ☐

7. Azhutthal  
(ducking) ☐

8. Padutthal  
(Lying) ☐

9. Kalatthal  
(Blending) ☐

10. Munnokku (Advancing) ☐ 11. Pinnokku (Flinching) ☐ 12. Suzhalal (Revolving) ☐
13. Pakkamnokku (Swerving) ☐

### 3.Naadi nadai

1. Vali ☐ 2. Azhal ☐ 3. Iyyam ☐
4. Vali Azhal ☐ 5. Azhal Vali ☐ 6. Iyya Vali ☐
7. Vali Iyyam ☐ 8. Azhal Iyyam ☐ 9. Iyya Azhal ☐

Any Other Findings \_\_\_\_\_

## II.NAA (TONGUE)

1. Maa Padinthuruthal (Coatedness) 1. Absent ☐ 2. Present ☐ \_\_\_\_\_

2. Niram (Colour) 1.Sivappu (Red) ☐ 2. Manjal(Yellow) ☐

3. Velluppu (Pale) ☐ 4. Karuppu (Dark) ☐ Others \_\_\_\_\_

3. Suvai (Taste sensation) 1.Pulippu (Sour) ☐ 2. Kaippu (Bitter) ☐ 3. Inippu (Sweet) ☐

4. Vedippu (Fissure) 1. Present ☐ 2. Absent ☐

5. Vai neer oorai (Salivation) 1.Normal ☐ 2. Increased ☐ 3.Reduced ☐

Any Other Findings \_\_\_\_\_

## III.NIRAM (COMPLEXION)

1. Karuppu (Dark-Vatham) ☐ 2.Manjal (Yellowish-Pitham) ☐
- 3.Velluppu (Fair-Kabam) ☐ 4. Thontham ☐

Any Other Findings \_\_\_\_\_

#### IV. MOZHI (VOICE)

- |   |                          |  |                          |
|---|--------------------------|--|--------------------------|
| 1. Sama oli<br>(Medium pitched-Vatham)  | <input type="checkbox"/> | 2 Urattha oli<br>(High pitched-Pitham) | <input type="checkbox"/> |
| 3.Thazhantha oli<br>(Low pitched-Kabam) | <input type="checkbox"/> | 4. Thontham                            | <input type="checkbox"/> |

Any Other Findings \_\_\_\_\_

#### V. VIZHI (EYES)

1. Niram (Venvizhi)  
(Discolouration)

- |                      |                          |                       |                          |
|----------------------|--------------------------|-----------------------|--------------------------|
| 1. Karuppu<br>(Dark) | <input type="checkbox"/> | 2. Manjal<br>(Yellow) | <input type="checkbox"/> |
| 3.Sivappu<br>(Red)   | <input type="checkbox"/> | 4.Velluppu<br>(White) | <input type="checkbox"/> |
| 5. No Discoloration  | <input type="checkbox"/> | 6.Thontham            | <input type="checkbox"/> |

2. Kanneer (Tears)
- |          |                          |              |                          |          |                          |
|----------|--------------------------|--------------|--------------------------|----------|--------------------------|
| 1.Normal | <input type="checkbox"/> | 2. Increased | <input type="checkbox"/> | 3.Reduce | <input type="checkbox"/> |
|----------|--------------------------|--------------|--------------------------|----------|--------------------------|

3. Erichchal (Burning sensation)
- |           |                          |           |                          |
|-----------|--------------------------|-----------|--------------------------|
| 1.Present | <input type="checkbox"/> | 2. Absent | <input type="checkbox"/> |
|-----------|--------------------------|-----------|--------------------------|

4. Peelai seruthal (Mucus excrements)
- |           |                          |           |                          |
|-----------|--------------------------|-----------|--------------------------|
| 1.Present | <input type="checkbox"/> | 2. Absent | <input type="checkbox"/> |
|-----------|--------------------------|-----------|--------------------------|

Any Other Findings \_\_\_\_\_

#### VI. MEI KURI-SPARISAM (PHYSICAL SIGNS)

- |                       |                             |                          |                              |                          |
|-----------------------|-----------------------------|--------------------------|------------------------------|--------------------------|
| 1. Veppam<br>(Warmth) | 1. Mitham<br>(Mild -Vatham) | <input type="checkbox"/> | 2. Migu<br>(Moderate-Pitham) | <input type="checkbox"/> |
|                       | 3. Thatpam<br>( Low-Kabam)  | <input type="checkbox"/> |                              |                          |

2. Viyarvai (Sweat)
- |           |                          |              |                          |            |                          |           |
|-----------|--------------------------|--------------|--------------------------|------------|--------------------------|-----------|
| 1. Normal | <input type="checkbox"/> | 2. Increased | <input type="checkbox"/> | 3. Reduced | <input type="checkbox"/> | Area_____ |
|-----------|--------------------------|--------------|--------------------------|------------|--------------------------|-----------|

3. Thodu vali (Tenderness)
- |           |                          |            |                          |       |
|-----------|--------------------------|------------|--------------------------|-------|
| 1. Absent | <input type="checkbox"/> | 2. Present | <input type="checkbox"/> | _____ |
|-----------|--------------------------|------------|--------------------------|-------|

Any Other Findings \_\_\_\_\_



## VII. MALAM (STOOLS)

1. Niram (Color)	1. Karuppu (Dark-Vatham)	<input type="checkbox"/>	2. Manjal (Yellowish -Pitham)	<input type="checkbox"/>
	3. Sivappu (Reddish-Pitham)	<input type="checkbox"/>	4. Velluppu (Pale-Kabam)	<input type="checkbox"/>
2. Sikkal (Constipation)	1. Present	<input type="checkbox"/>	2. Absent	<input type="checkbox"/>
3. Sirutthal (Poorly formed stools)	1. Present	<input type="checkbox"/>	2. Absent	<input type="checkbox"/>
4. Kalichchal (Loose watery stools)	1. Present	<input type="checkbox"/>	2. Absent	<input type="checkbox"/>
5. Seetham (Watery and mucoid excrements)	1. Present	<input type="checkbox"/>	2. Absent	<input type="checkbox"/>
6. Vemmai (Warmth)	1. Present	<input type="checkbox"/>	2. Absent	<input type="checkbox"/>
7. History of habitual constipation	1. Present	<input type="checkbox"/>	2. Absent	<input type="checkbox"/>
8. Passing of	a) Mucous	1. Yes <input type="checkbox"/>	2. No <input type="checkbox"/>	
	b) Blood	1. Yes <input type="checkbox"/>	2. No <input type="checkbox"/>	

Any Other Findings \_\_\_\_\_

## VIII. MOOTHIRAM (URINE)

### \a) NEER KURI (PHYSICAL CHARACTERISTICS)

#### 1. Niram (colour)

Pale yellow	<input type="checkbox"/>	Milky purulent	<input type="checkbox"/>	orange	<input type="checkbox"/>
Red	<input type="checkbox"/>	Greenish	<input type="checkbox"/>	dark brown	<input type="checkbox"/>
Bright red	<input type="checkbox"/>	Black	<input type="checkbox"/>	Brown red or yellow	<input type="checkbox"/>
Colourless	<input type="checkbox"/>				

## 2. Manam (odour)

Ammoniacal : ☐

Fruity : ☐

Others : \_\_\_\_\_

## 3. Edai (Specific gravity)

Normal (1.010-1.025) : ☐

High Specific gravity (>1.025) : ☐

Low Specific gravity (<1.010) : ☐

Low and fixed Specific gravity (1.010-1.012): ☐

## 4. Alavu(volume)

Normal (1.2-1.5 lt/day) : ☐

Polyuria (>2lt/day) : ☐

Oliguria (<500ml/day) : ☐

## 5. Nurai(froth)

Froth ☐

Clear ☐

Cloudy ☐

6.Enjal (deposits) :      Yes                      No  
☐    ☐

Any Other Findings \_\_\_\_\_

**(b) NEI KURI (oil spreading sign)**

**Shape**

**Spreading nature**

**Special details (if any)**

**[2]. MANIKADAI NOOL (Wrist circummetric sign)**

Right : \_\_\_\_\_ fbs

Left : \_\_\_\_\_ fbs

**[3]. THATHUVA IYALPU:**

**MANO THATHUVAM**

Sathuva Gunam ☐

Rajo Gunam ☐

Thamo Gunam ☐

#### 4.. YAKKAI (SOMATIC TYPES)

##### Udal thathuvam

Vatha constitution	Pitha constitution	Kaba constitution
Lean and lanky built <input type="checkbox"/>	Thin covering of bones and joints by soft tissue <input type="checkbox"/>	Plumpy joints and limbs <input type="checkbox"/>
Hefty proximities of limbs <input type="checkbox"/>	Always found with warmth, sweating and offensive body odour <input type="checkbox"/>	Broad forehead and chest <input type="checkbox"/>
Cracking sound of joints on walking <input type="checkbox"/>	Wrinkles in the skin <input type="checkbox"/>	Sparkling eyes with clear sight <input type="checkbox"/>
Dark and thicker eye lashes <input type="checkbox"/>	Red and yellow admixed complexion <input type="checkbox"/>	Lolling walk <input type="checkbox"/>
Dark and light admixed complexion <input type="checkbox"/>	Easily suffusing eyes due to heat and alcohol <input type="checkbox"/>	Immense strength despite poor eating <input type="checkbox"/>
Split hair <input type="checkbox"/>	Sparse hair with greying <input type="checkbox"/>	High tolerance to hunger, thirst and fear <input type="checkbox"/>
Clear words <input type="checkbox"/>	Intolerance to hunger, thirst and heat <input type="checkbox"/>	Exemplary character with good memory power <input type="checkbox"/>
Scant appetite for cold food items <input type="checkbox"/>	Inclination towards perfumes like sandal <input type="checkbox"/>	More liking for sweet taste <input type="checkbox"/>
Poor strength despite much eating <input type="checkbox"/>	Slender eye lashes <input type="checkbox"/>	Husky voice <input type="checkbox"/>
Loss of libido <input type="checkbox"/>	Pimples and moles are plenty <input type="checkbox"/>	
In generosity <input type="checkbox"/>		
Sleeping with eyes half closed <input type="checkbox"/>		

**RESULTANT SOMATIC TYPE:** \_\_\_\_\_

**[5]. IYMPORIGAL /IYMPULANGAL**  
**(Penta sensors and its modalities)**

	<b>1. Normal</b>	<b>2. Affected</b>	
1. Mei (skin)	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Vaai (Mouth/ Tongue)	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Kan (Eyes)	<input type="checkbox"/>	<input type="checkbox"/>	_____
4. Mookku (Nose)	<input type="checkbox"/>	<input type="checkbox"/>	_____
5. Sevi (Ears)	<input type="checkbox"/>	<input type="checkbox"/>	_____

**[6]. KANMENTHIRIYANGAL /KANMAVIDAYANGAL**  
**(Motor machinery and its execution)**

	<b>1. Normal</b>	<b>2. Affected</b>	
1. Kai (Hands)	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Kaal (Legs)	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Vaai (Mouth)	<input type="checkbox"/>	<input type="checkbox"/>	_____
4. Eruvai (Analepy)	<input type="checkbox"/>	<input type="checkbox"/>	_____
5. Karuvaai (Birth canal)	<input type="checkbox"/>	<input type="checkbox"/>	_____

**[7] UYIR THATHUKKAL**

**A. VALI**

	<b>1. Normal</b>	<b>2. Affected</b>	
1. Praanan (Heart centre)	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Abaanan (Matedial of muladhar centre)	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Samaanan (Navel centre)	<input type="checkbox"/>	<input type="checkbox"/>	_____
4. Udhaanan (Forehead centre)	<input type="checkbox"/>	<input type="checkbox"/>	_____

5. Viyaanan (Throat centre)	<input type="checkbox"/>	<input type="checkbox"/>	_____
6. Naahan (Higher intellectual function)	<input type="checkbox"/>	<input type="checkbox"/>	_____
7. Koorman (Air of yawning)	<input type="checkbox"/>	<input type="checkbox"/>	_____
8. Kirukaran (Air of salivation)	<input type="checkbox"/>	<input type="checkbox"/>	_____
9. Devathathan (Air of laziness)	<input type="checkbox"/>	<input type="checkbox"/>	_____
10. Dhananjeyan (Air that acts on death)	<input type="checkbox"/>	<input type="checkbox"/>	_____

## B. AZHAL

	1. Normal	2. Affected	
1. Anala pittham (Gastric juice)	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Prasaka pittham (Bile)	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Ranjaka pittham (Haemoglobin)	<input type="checkbox"/>	<input type="checkbox"/>	_____
4. Aalosaka pittham (Aqueous Humour)	<input type="checkbox"/>	<input type="checkbox"/>	_____
5. Saathaka pittham (Life energy)	<input type="checkbox"/>	<input type="checkbox"/>	_____

### C. IYYAM

	1. Normal	2. Affected
1. Avalambagam (Serum)	<input type="checkbox"/>	<input type="checkbox"/> _____
2. Kilethagam (saliva)	<input type="checkbox"/>	<input type="checkbox"/> _____
3. Pothagam (lymph)	<input type="checkbox"/>	<input type="checkbox"/> _____
4. Tharpagam (cerebrospinal fluid)	<input type="checkbox"/>	<input type="checkbox"/> _____
5. Santhigam (Synovial fluid)	<input type="checkbox"/>	<input type="checkbox"/> _____

### 8] UDAL THATHUKKAL:

#### A. SAARAM:

INCREASED SAARAM (CHYLE)	DECREASED SAARAM(CHYLE)
Loss of appetite <input type="checkbox"/>	Loss of weight <input type="checkbox"/>
Excessive salivation <input type="checkbox"/>	Tiredness <input type="checkbox"/>
Loss of perseverance <input type="checkbox"/>	Dryness of the skin <input type="checkbox"/>
Excessive heaviness White musculature <input type="checkbox"/>	Diminished activity of the sense organs <input type="checkbox"/>
Cough, dyspnoea, excessive sleep <input type="checkbox"/>	
Weakness in all joints of the body <input type="checkbox"/>	

Normal

☐

Abnormal

☐

B.CENNEER:

INCREASED CENNEER(BLOOD)	DECREASED CENNEER(BLOOD)
Boils in different parts of the body <input type="checkbox"/>	Anemia <input type="checkbox"/>
Anorexia <input type="checkbox"/>	Tiredness <input type="checkbox"/>
Mental disorder <input type="checkbox"/>	Neuritis <input type="checkbox"/>
Splenomegaly <input type="checkbox"/>	Lassitude <input type="checkbox"/>
Colic pain <input type="checkbox"/>	Pallor of the body <input type="checkbox"/>
Increased pressure <input type="checkbox"/>	
Reddish eye and skin <input type="checkbox"/>	
Jaundice <input type="checkbox"/>	
Haematuria <input type="checkbox"/>	

Normal

☐

Abnormal

☐

C.OON:

INCREASED OON (MUSLE)	DECREASED OON (MUSLE)
Cervical lymphadenitis <input type="checkbox"/>	Impairment of sense organs <input type="checkbox"/>
Vernical ulcer <input type="checkbox"/>	Joint pain <input type="checkbox"/>
Tumour in face ,abdomen, thigh, genitalia <input type="checkbox"/>	Jaw, thigh and genitalia gets shortened <input type="checkbox"/>
Hyper muscular in the cervical region <input type="checkbox"/>	

Normal

☐

Abnormal

☐



D.KOZHUPPU:

INCREASED KOZHUPPU (ADIPOSE TISSUE)	DECREASED KOZHUPPU (ADIPOSE TISSUE)
Cervical lymph adenitis <input type="checkbox"/>	Pain in the hip region <input type="checkbox"/>
Vernical ulcer <input type="checkbox"/>	Disease of the spleen <input type="checkbox"/>
Tumour in face, abdomen, thigh, genitalia <input type="checkbox"/>	
Hyper muscular in the cervical region <input type="checkbox"/>	
Dyspnoea <input type="checkbox"/>	
Loss of activity <input type="checkbox"/>	

Normal ☐ Abnormal ☐

E.ENBU:

INCREASED ENBU (BONE)	DECREASED ENBU (BONE)
Growth in bones and teeth <input type="checkbox"/>	Bones diseases <input type="checkbox"/>
	Loosening of teeth <input type="checkbox"/>
	Nails splitting <input type="checkbox"/>
	Falling of hair <input type="checkbox"/>

Normal ☐ Abnormal ☐

F.MOOLAI:

INCREASED MOOLAI (BONE MARROW)	DECREASED MOOLAI (BONE MARROW)
Heaviness of the body <input type="checkbox"/>	Osteoporosis <input type="checkbox"/>
Swollen eyes <input type="checkbox"/>	Sunken eyes <input type="checkbox"/>
Swollen phalanges <input type="checkbox"/>	
chubby fingers <input type="checkbox"/>	
Oliguria <input type="checkbox"/>	
Non healing ulcer <input type="checkbox"/>	

Normal

☐

Abnormal

☐

G.SUKKILAM/SURONITHAM:

INCREASED SUKKILAM/SURONITHAM (SPERM OR OVUM)	DECREASED SUKKILAM/SURONITHAM (SPERM OR OVUM)
Infatuation and lust towards women / men <input type="checkbox"/>	Failure in reproduction <input type="checkbox"/>
Urinary calculi <input type="checkbox"/>	Pain in the genitalia <input type="checkbox"/>

Sukkilam Buoyancy on water

☐

Normal

☐

Abnormal

☐

[9] DHASANAADI

1. Idagalai
2. Pingalai
3. Suzhumunai
4. Siguvai
5. Purudan
6. Kaanthari
7. Atthi
8. Alambudai
9. Sangini
10. Kugu

## **10.KOSANGAL**

1. Annamayakosam
2. Praanamaya kosam
3. Manomayakosam
4. Vignanamayakosam
5. Anandhamayakosam

## **[11] MUKKUTRA MIGU GUNAM**

### **I. Vali Migu Gunam**

- |                            |                          |
|----------------------------|--------------------------|
| 1. Emaciation              | <input type="checkbox"/> |
| 2. Complexion – blackish   | <input type="checkbox"/> |
| 3. Desire to take hot food | <input type="checkbox"/> |
| 4. Shivering of body       | <input type="checkbox"/> |
| 5. Abdominal distension    | <input type="checkbox"/> |
| 6. Constipation            | <input type="checkbox"/> |
| 7. Insomnia                | <input type="checkbox"/> |
| 8. Weakness                | <input type="checkbox"/> |
| 9. Defect of sense organs  | <input type="checkbox"/> |
| 10. Giddiness              | <input type="checkbox"/> |
| 11. Lack of interest       | <input type="checkbox"/> |

### **II. Vali Kurai Gunam**

- |                    |                          |
|--------------------|--------------------------|
| 1.Body pain        | <input type="checkbox"/> |
| 2.Diminished voice | <input type="checkbox"/> |
| 3.Diminished work  | <input type="checkbox"/> |
| 4.Delirium         | <input type="checkbox"/> |
| 5.Arivu mangal     | <input type="checkbox"/> |
|                    | <input type="checkbox"/> |

## 6.Features of increased Kapha

### III. Pitham Migu Gunam

1. Yellowish discolouration of skin ☐
2. Yellowish discolouration of the eye ☐
3. Yellow coloured urine ☐
4. Yellowishness of faeces ☐
5. Increased appetite ☐
6. Increased thirst ☐
7. Burning sensation over the body ☐
8. Sleep disturbances ☐

### II. Pitham kurai Gunam

- 1.Indigestion ☐
- 2.Chillness ☐
- 3.Discolouration ☐
- 4.Deranged Kapha ☐

### V. Kapham migu gunam

1. Increased salivary secretion ☐
2. Reduced activeness ☐
3. Heaviness of the body ☐
4. Body colour – fair complexion ☐
5. Chillness of the body ☐
6. Reduced appetite ☐
7. Eraippu ☐
8. Increased sleep ☐

**VI. Kapham Kurai gunam**

- |                                |                          |
|--------------------------------|--------------------------|
| 1. Giddiness                   | <input type="checkbox"/> |
| 2. Loss of fluid in the Joints | <input type="checkbox"/> |
| 3. Increased Sweating          | <input type="checkbox"/> |
| 4. Palpitation                 | <input type="checkbox"/> |

**[12]. NOIUTRA KALAM**

- |                                     |                          |                                       |                          |
|-------------------------------------|--------------------------|---------------------------------------|--------------------------|
| 1. Kaarkaalam<br>(Aug15-Oct14)      | <input type="checkbox"/> | 2. Koothirkaalam<br>(Oct15-Dec14)     | <input type="checkbox"/> |
| 3. Munpanikaalam<br>(Dec15-Feb14)   | <input type="checkbox"/> | 4. Pinpanikaalam<br>(Feb15-Apr14)     | <input type="checkbox"/> |
| 5. Ilavanirkaalam<br>(Apr15-June14) | <input type="checkbox"/> | 6. Muthuvenirkaalam<br>(June15-Aug14) | <input type="checkbox"/> |

**[13]. NOI UTRA NILAM**

- |                               |                          |                             |                          |                         |                          |
|-------------------------------|--------------------------|-----------------------------|--------------------------|-------------------------|--------------------------|
| 1. Kurunji<br>(Hilly terrain) | <input type="checkbox"/> | 2. Mullai<br>(Forest range) | <input type="checkbox"/> | 3. Marutham<br>(Plains) | <input type="checkbox"/> |
| 4. Neithal<br>(Coastal belt)  | <input type="checkbox"/> | 5. Paalai<br>(Desert)       | <input type="checkbox"/> |                         |                          |

[14]. Date of Birth

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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[15]. Time of Birth

<input type="text"/>	AM	<input type="text"/>	PM	<input type="text"/>
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[16]. Place of Birth: \_\_\_\_\_

[17]. **Rasi (Zodiac Sign)**

1. Mesam	<input type="checkbox"/>	2. Rishabam	<input type="checkbox"/>	3. Midhunam	<input type="checkbox"/>
4. Katakam	<input type="checkbox"/>	5. Simmam	<input type="checkbox"/>	6. Kanni	<input type="checkbox"/>
7. Thulam	<input type="checkbox"/>	8. Viruchiam	<input type="checkbox"/>	9. Dhanusu	<input type="checkbox"/>
10. Maharam	<input type="checkbox"/>	11. Kumbam	<input type="checkbox"/>	12. Meenam	<input type="checkbox"/>

[18]. **Natchathiram (birth stars):**

1. Aswini	<input type="checkbox"/>	2. Barani	<input type="checkbox"/>	3. Karthikai	<input type="checkbox"/>
4. Rohini	<input type="checkbox"/>	5. Mirugaseeradam	<input type="checkbox"/>	6. Thiruvathirai	<input type="checkbox"/>
7. Punarpoosam	<input type="checkbox"/>	8. Poosam	<input type="checkbox"/>	9. Ayilyam	<input type="checkbox"/>
10. Makam	<input type="checkbox"/>	11. Pooram	<input type="checkbox"/>	12. Utthiram	<input type="checkbox"/>
13. Astham	<input type="checkbox"/>	14. Chithirai	<input type="checkbox"/>	15. Swathi	<input type="checkbox"/>
16. Visakam	<input type="checkbox"/>	17. Anusam	<input type="checkbox"/>	18. Kettai	<input type="checkbox"/>
19. Moolam	<input type="checkbox"/>	20. Pooradam	<input type="checkbox"/>	21. Uthiradam	<input type="checkbox"/>
22. Thiruvonam	<input type="checkbox"/>	23. Avittam	<input type="checkbox"/>	24. Sadayam	<input type="checkbox"/>
25. Poorattathi	<input type="checkbox"/>	26. Uthirattathi	<input type="checkbox"/>	27. Revathi	<input type="checkbox"/>
28. Not Known	<input type="checkbox"/>				

Any other details

**Date :**

**P.G Scholar**

**Lecturer\HOD**

## ANNEXURE IV

**NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47**  
**DEPARTMENT OF NOI NAADAL**  
**A STUDY ON DIAGNOSTIC METHODOLOGY**  
**IN SIDDHA SYSTEM FOR AAN MALADU /MALE INFERTILITY**

### FORM-III

#### LABORATORY INVESTIGATIONS

1. O.P No: \_\_\_\_\_ Lab.No \_\_\_\_\_ Serial No \_\_\_\_\_

2. Name: \_\_\_\_\_

3. Date of birth : 

D	D

M	M

Y	E	A	R

4. Age : \_\_\_\_\_ years

5. Date of assessment: \_\_\_\_\_

#### **Blood**

9. Hb \_\_\_\_\_ gms%

10. T.RBC \_\_\_\_\_ Cells/cu mm

11. T.WBC

12. DC

P \_\_\_\_\_%      L \_\_\_\_\_%      E \_\_\_\_\_%      M \_\_\_\_\_%      B \_\_\_\_\_%

12. ESR At 30 minutes \_\_\_\_\_ mm      At 60 minutes \_\_\_\_\_ mm

13. Blood Sugar-F \_\_\_\_\_ mgs%    PP \_\_\_\_\_ mgs%    R \_\_\_\_\_ mgs%

14. SGOT & SGPT \_\_\_\_\_

15. Serum Cholesterol \_\_\_\_\_ mgs %

- 16. HDL \_\_\_\_\_ mgs%
- 17. LDL \_\_\_\_\_mgs%
- 18. Triglycerides \_\_\_\_\_mgs%
- 19. Blood Urea \_\_\_\_\_mgs%
- 20. Serum Creatinine \_\_\_\_\_mgs%

### **Urine Examination**

- 1.Sugar \_\_\_\_\_
- 2.Albumin \_\_\_\_\_
- 3.Deposits \_\_\_\_\_
- 4.Frothiness \_\_\_\_\_
- 5.Neerkuri
- 6. Nei kuri \_\_\_\_\_

### **Motion examination**

- 1. Ova
- 2. Cyst
- 3. Occult Blood.

### **Semen analysis**

- 1. .Volume
- 2. Concentration
- 3. Viscosity
- 4. Ph
- 5. Motility
- 6. Morphology
- 7. Liquefaction time.
- 8. Presence of WBC/Bacteria



9. Fructose

10. Buoyancy in water

**OTHER INVESTIGATIONS**(if warranted)

1. Hormonal study- Testosterone, FSH.

2. Testicular Scan.

Other details

**Date :**

**P.G Scholar**

**Lecturer**

**ANNEXURE V**  
**NATIONAL INSTITUTE OF SIDDHA, CHENNAI -47**  
**DEPARTMENT OF NOI NAADAL**  
**A STUDY ON DIAGNOSTIC METHODOLOGY**  
**IN SIDDHA SYSTEM FOR AAN MALADU /MALE INFERTILITY**  
**REGISTRATION NO :32103201 (2011-2013)**

**FORM IV**

**INFORMED WRITTEN CONSENT FORM**

I .....exercising my free power of choice, hereby give my consent to be included as a subject in the diagnostic trial entitled “ A study on Siddha diagnostic methodology for Aan maladu(Male infertility). I may be asked to give blood,urine and semen samples during the study.

I have been informed about the study to my satisfaction by the attending investigator about the purpose of this trial, nature of study and the laboratory investigations. I also give my consent to publish my study results in scientific conferences and reputed scientific journals for the betterment of clinical research.

I am also aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

Signature /thumb impression of the patient :

Date :

Name of the patient :

Signature of the investigator :

Date :

Head of the Department :

Date

தேசிய சித்த மருத்துவ நிறுவனம், சென்னை-47.

நோய் நாடல் துறை

ஆண் மலடு - சித்த மருத்துவ  
நோய் கணிப்பு முறை பற்றிய ஓர் ஆய்வு

பதிவு எண்-32103201 (2011-2013)

ஒப்புதல் படிவம்  
ஆய்வாளரால் சான்றளிக்கப்பட்டது

நான் - ந்த ஆண் மலடு - நோய் கணிப்பு முறை ஆய்வை குறித்த அனைத்து விபரங்களையும் நோயாளிக்கு புரியும் வகையில் எடுத்துரைத்தேன் என உறுதியளிக்கிறேன்.

தேதி :

- டம்:

கையொப்பம் :

பெயர் :

நோயாளியின் ஒப்புதல்

நான், \_\_\_\_\_ என்னுடைய சுதந்திரமாக தேர்வு செய்யும் உரிமையைக் கொண்டு - ந்கு தலைப்பிடப்பட்ட ஆண் மலடு நோயை கணிப் பதற்கான மருத்துவ ஆய்விற்கு என்னை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

என்னிடம் - ந்தமருத்துவ ஆய்வின் காரணத்தையும், மருத்துவ ஆய்வுக்கூட பரிசோதனைகள் பற்றி திருப்தி அளிக்கும் வகையில் ஆய்வு மருத்துவரால் விளக்கிக் கூறப்பட்டது.

நான் - ந்த மருத்துவ ஆய்வின் போது காரணம் எதுவும் கூறாமல், எப்பொழுது வேண்டுமானாலும் - ந்த ஆய்விலிருந்து என்னை விடுவித்து கொள்ளும் உரிமையை தெரிந்திருக்கின்றேன்.

தேதி:

- டம்:

கையொப்பம் :

பெயர் :

தேதி :

- டம்:

சாட்சிக்காரர் கையொப்பம்:

பெயர் :

உறவுமுறை :

## **ANNEXURE V I**

**NATIONAL INSTITUTE OF SIDDHA, CHENNAI -47  
DEPARTMENT OF NOI NAADAL  
A STUDY ON DIAGNOSTIC METHODOLOGY  
IN SIDDHA SYSTEM FOR AAN MALADU /MALE INFERTILITY  
FORM - IV-A**

### **PATIENT INFORMATION SHEET**

#### **PURPOSE OF RESEARCH AND BENEFITS:**

The diagnostic research study in which your participation is proposed to assess the diagnostic methods in Siddha system in “**Aan maladu/Male infertility**” patients. Knowledge gained from this study would be of benefit to patients suffering from such conditions for the diagnosis and prognosis.

#### **STUDY PROCEDURE:**

You will be interviewed and examined as OP and IP patients at the study centre. At the first visit the physician will conduct a brief physical examination and assess the condition followed by Envagai thervu and routine blood, urine and semen analysis. After matching the inclusion criteria you will be included in this study and you will be examined on the basis of Envagai thervu.

#### **POSSIBLE RISK:**

During this study there may be a minimum pain to you while drawing blood sample.

#### **CONFIDENTIALITY:**

Your medical records will be treated with confidentiality and will be revealed only to other doctors / scientists. The results of this study may be published in a scientific journal, but you will not be identified by your name.

## **YOUR PARTICIPATION AND YOUR RIGHTS:**

Your participation in this study is voluntary and you may be withdrawn from this study anytime without having to give reasons for the same. You will be informed about the findings that occur during the study. If you do agree to take part in this study, your health record will need to be made available to the investigators. If you don't wish to participate at any stage, the level of care you receive will in no way be affected.

The Institution Ethics committee cleared the study for undertaking at OPD and IPD, NIS. Should any question arise with regards to this study you contact following person

P.G scholar	:	Principal investigator Department of Noi Naadal National Institute of Siddha, Chennai-600 047. E mail: Mobile no :
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தேசிய சித்த மருத்துவ நிறுவனம், சென்னை-47.  
நோய் நாடல் துறை

ஆண் மலடு - சித்த மருத்துவ  
நோய் கணிப்பு முறை பற்றிய ஓர் ஆய்வு

நோயாளியின் தகவல் படிவம்

ஆய்வின் நோக்கமும் பயனும்:

தாங்கள் பங்கெடுத்துக் கொள்ளும் “ஆண் மலடு  
நோயை கணிப்பதற்கான சித்த மருத்துவ ஆய்வு” சித்த மருத்துவ  
முறையில் நோயை கணிப்பதற்கான ஓர் ஆய்வுமுறை. - வ்வாய்வு  
தங்களின் நோய்கணிப்பை பற்றியும் நாளுக்கு நாள் - ருக்கும்  
நோயின் தன்மை பற்றியும் அறிய உதவும்.

ஆய்வு முறை:

தாங்கள் நேர்காணல் மற்றும் பரிசோதனைகளின் மூலம் உள்நோயாளி,  
வெளிநோயாளி பிரிவில் ஆய்வு செய்யப்படுவீர்கள். முதல்  
நேர்காணலின்போது ஆய்வாளரால் உடல் பரிசோதனை, நீர் மற்றும்  
- ரத்த பரிசோதனை செய்து குறிப்பிட்ட குறிகுணங்கள் - ருப்பின்  
- வ்வாய்விற்காக எடுத்துக்கொள்ளப்படுவீர்கள்.

நேரும் உபாதைகள்:

- வ்வாய்வில் - ரத்த பரிசோதனைக்காக - ரத்தம்  
எடுக்கும்போது சிறிது வலி ஏற்படலாம்.

மந்தணம் :

தங்களின் மருத்துவ ஆவணங்கள் அனைத்தும் மருத்துவர்,ஆய்வாளர்  
அல்லாத பிறரிடம் தெரிவிக்கப்படமாட்டாது.

நோயாளியின் பங்களிப்பும் உரிமைகளும்:

- வ்வாய்வில் தங்களின் பங்களிப்பு தன்னிச்சையானது.- வ்வாய்வில்  
தாங்கள் ஒத்துழைக்க - யலவில்லையெனில் எப்பொழுது  
வேண்டுமானாலும் காரணம் எதுவும் கூறாமல் விலகிக்கொள்ளலாம்.  
- வ்வாய்வின்போது அறியப்படும் தகவல்கள் தங்களுக்கு

தெரிவிக்கப்படும். நோயாளியின் ஒப்புதலுக்கிணங்க நோய்கணிப்பு  
விவரங்களை ஆய்வாளர் பயன்படுத்திக்கொள்வார். நோயாளி  
ஆய்வினிடையே ஒத்துழைக்க மறுத்தாலும் எந்த நிலையிலும்  
நோயாளியை கவனிக்கும் விதம் பாதிக்கப்பட மாட்டது. நிறுவன  
நெறிமுறை குழுமம் மேற்கண்ட ஆய்வினை மேற்கொள்ள ஒப்புதல்  
அளித்துள்ளது.  
ஆய்வு குறித்த சந்தேகங்கள் - ரூப்பின் கீழ்க்கண்ட நபரை தொடர்பு  
கொள்ளவும்.

பட்டமேற்படிப்பாளர் :

நோய் நாடல் துறை  
தேசிய சித்த மருத்துவ நிறுவனம்,  
சென்னை-47.

மின் அஞ்சல் -  
தொலைபேசி எண்



**The Tamil Nadu Dr. M.G.R. Medical University**  
69, Anna Salai, Guindy, Chennai-600 032

This Certificate is awarded to Mr/Ms/Dr...N.E.ASHOK...KUMAR.....  
for participating as a ~~Resource Person~~ / Delegate in the VIII Workshop  
on **"Research Methodology & Biostatistics"**  
for AYUSH Post-Graduates & Researchers  
organized by the Department of Siddha  
The Tamil Nadu Dr. M.G.R. Medical University  
from 27th August 2012 to 31st August 2012.

**Dr. N. KABILAN** MD (Siddha)  
READER, DEPT. OF SIDDHA

**Dr. S. MINI JACOB** MD  
REGISTRAR (FAC)

**DR. MAYILVAHANAN NATARAJAN D.Sc.**  
M.S.Orth. M.Ch.Orth. (L'pool) Ph.D. (Orth. Onco.) F.R.C.S. (Eng)

**7th VICE CHANCELLOR**





## NATIONAL INSTITUTE OF SIDDHA

(An Autonomous Body under Department of AYUSH)  
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Name: Dr. N.E. ASHOK KUMAR Reg No: 32103201  
Title: A STUDY ON DIAGNOSTIC METHODOLOGY IN  
SIDDHA SYSTEM FOR AAN MALADU / MALE INFERTILITY  
No. NIS/IEC/2011/3/33 - 24/12/2011

### DECISION

Opinion of the Institutional Ethics Committee – Please Check one	
<input checked="checked" type="checkbox"/>	Approval
<input type="checkbox"/>	Modifications required prior to approval (Please specify one space below)
<input type="checkbox"/>	Disapproval
Date of review: _____	<u>K. Manickavasagam</u> (Dr. K. MANICKAVASAGAM) member secretary
Signed: <u>D. V. Subramanian</u> chair person	(Please print name) <u>Dr. V. SUBRAMANIAN</u>
(Please delete as appropriate, Chairperson, Secretary)	
Modifications needed	
Modification given to candidate	
The research proponent is hereby informed that the Institutional Ethics Committee will require the following: 1. All adverse drug reactions (ADRs) that are both serious and unexpected to be reported promptly to the IEC within 7 working days 2. The progress report to be submitted to the IEC atleast annually 3. Upon completion of the study, a final study status report needs to be submitted to the IEC	